J Comp Physiol A (1987) 160:703–720

Journal of Comparative Physiology A Sensory, Neural, and Behavioral Physiology
© Springer-Verlag 1987

Author Index to Volumes 151–160 (1983–1987)

Up to and including Volume 153, parts A and B appeared together as one journal with parts A and B appearing alternately. Since Volume 154, the two parts have been published as two separate journals. Therefore, A and B were inserted after the volume number in Vols. 151–153. From Volume 154 onwards the author and subject index refers exclusively to the *Journal of Comparative Physiology A: Sensory, Neural and Behavioral Physiology*.

A

Able KP, Cherry JD (1986) Mechanisms of dusk orientation in white-throated sparrows (*Zonotrichia albicollis*): Clock-shift experiments 159:107
Ache BW, see Carr WES, et al
Ache BW, see Derby CD, et al
Achituv Y, see Susswein AJ, et al
Ackerman RA, see Lillywhite HB, et al
Adam L-J (1983) Hind femora influence directionality of the locust ear. A possible physical solution for front/rear ambiguity 152A:509
Adler K, Phillips JB (1985) Orientation in a desert lizard (*Uma notata*): time-compensated compass movement and polarotaxis 156:547
Adler NT, see Finkenstädt T, et al
Aeberhard B, see Remé C, et al
Ahearn GA, see Ferraris RP
Aicher B, Tautz J (1984) 'Peripheral inhibition' of vibration-sensitive units in the leg of fiddler crab *Uca pugilator* 154:49
Aicher B, see Elepfandt A, et al
Albus H, see Groot JA, et al
Allen EE, Fernald RD (1985) Spectral sensitivity of the African cichlid fish, *Haplochromis burtoni* 157:247
Allen TO, see Finkenstädt T, et al
Altman JS, see Boyan GS
Ammermüller J (1986) Passive cable properties of locust ocellar L-neurons 158:339
Ammermüller J, Weiler R (1985) S-neurons and not L-neurons are the source of GABAergic action in the ocellar retina 157:779
Ammermüller J, Zettler F (1986) Time- and voltage-dependent currents in locust ocellar L-neurones 159:363
Ampleford EJ (1985) Ecdysteroids influence the circadian system timing ecdysis in the insect *Rhodnius prolixus* (Hemiptera) 157:699
Andersen BB, see Michelsen A, et al
Ando F, see Tazaki K, et al
Aoki K, see Kawasaki M
Arad Z, see Midtgård U, et al
Arbas EA (1986) Control of hindlimb posture by wind-sensitive hairs and antennae during locust flight 159:849
Arbas EA, Calabrese RL (1984) Rate modification in the heartbeat central pattern generator of the medicinal leech 155:783
Ardizzoni SC, see Hamilton PV, et al
Arkett SA, Spencer AN (1986) Neuronal mechanisms of a hydromedusan shadow reflex. I. Identified reflex components and sequence of events 159:201
Arkett SA, Spencer AN (1986) Neuronal mechanisms of a hydromedusan shadow reflex. II. Graded response of reflex components, possible mechanisms of photic integration, and functional significance 159:215
Armett-Kibel C, Meinertzhagen IA (1983) Structural organization of the ommatidium in the ventral compound eye of the dragonfly *Sympetrum* 151A:285
Arzt AH, Silver WL, Mason JR, Clark L (1986) Olfactory responses of aquatic and terrestrial tiger salamanders to airborne and waterborne stimuli 158:479
Assem J van den, Putters FA, Voort-Vinkestijn M-J van der (1984) Effects of exposure to an extremely low temperature on recovery of courtship behaviour after waning in the parasitic wasp *Nasonia vitripennis* 155:233
Atema J, see Johnson BR, et al
Atkins G, Ligman S, Burghardt F, Stout JF (1984) Changes in phonotaxis by the female cricket *Acheta domesticus* L. after killing identified acoustic interneurons 154:795
Atwood HL, see Pahapill PA, et al
Atwood HL, see Stephens PJ
Autrum H, Linzen B (1983) A note from the executive editors 152B, A:1, 145

B

Bacon JP, Strausfeld NJ (1986) The dipteran 'Giant fibre' pathway: neurons and signals 158:529
Bacon JP, see Murphey RK, et al
Baeckström P, see Mustaparta H, et al
Bagnoli P, see Foà A, et al
Bailey WJ, see Römer H
Bakke JM, see Mustaparta H, et al
Bakker R, see Groot JA, et al
Ball EE, see Boyan GS
Balnave RJ, see Macdonald JA
Banister MJ, see White RH, et al
Barclay RMR (1983) Echolocation calls of emballonurid bats from Panama 151A:515
Bard C, see Simmons JA, et al
Barth FG, see Blickhan R
Barth FG, see Hergenröder R
Barth FG, see Speck-Hergenröder J
Barthelemy L, see Thomas S, et al
Bass AH, Hopkins CD (1984) Shifts in frequency tuning of electroreceptors in androgen-treated mormyrid fish 155:713
Bass AH, Hopkins CD (1985) Hormonal control of sex differences in the electric organ discharge (EOD) of mormyrid fishes 156:587
Bass AH, Segil N, Kelley DB (1986) Androgen binding in the brain and electric organ of a mormyrid fish 159:535
Bässler U (1986) Afferent control of walking movements in the stick insect *Cuniculina impigra*. I. Decerebrated animals on a treadband 158:345
Bässler U (1986) Afferent control of walking movements in the stick insect *Cuniculina impigra*. II. Reflex reversal and the release of the swing phase in the restrained foreleg 158:351
Bastian J (1986) Gain control in the electrosensory system: a role for the descending projections to the electrosensory lateral line lobe 158:505
Bastian J, Yuthas J (1984) The jamming avoidance response of *Eigenmannia*: properties of a diencephalic link between sensory processing and motor output 154:895
Bastian J, see Grau HJ
Bastian J, see Saunders J
Baumann M, Roth A (1986) The Ca^{++} permeability of the apical membrane in neuromast hair cells 158:681
Bell CC, see Meyer JH
Bell CC, see Slesinger P

Bell WJ, see Tobin TR
Bendele H (1986) Mechanosensory cues control chasing behaviour of whirligig beetles (Coleoptera, Gyrinidae) 158:405
Bender M, Gnatzy W, Tautz J (1984) The antennal feathered hairs in the crayfish: a non-innervated stimulus transmitting system 154:45
Bennett AF, see John-Alder HB, et al
Bennett MF (1986) Stress and changes in the blood of newts, *Notophthalmus viridescens*, during early regeneration 159:823
Bennett MF, Daigle KR (1983) Temperature, stress and the distribution of leukocytes in red-spotted newts, *Notophthalmus viridescens* 153A:81
Bennett MVL, see Susswein AJ, et al
Bennett RR, see White RH, et al
Benshalom G, Dagan D (1985) *Drosophila* neural pathways. Genetic and electrophysiological analysis 156:13
Bentrop J, see Paulsen R
Benvenuti S, Wallraff HG (1985) Pigeon navigation: Site simulation by means of atmospheric odours 156:737
Benvenuti S, see Wallraff HG, et al
Bercken J van den, see Ruigt Gé SF, et al
Berlind A (1985) Endogenous burst-organizing potentials in two classes of neurons in the lobster cardiac ganglion respond differently to alterations in divalent ion concentration 157:845
Bernard J, Gobin B, Callec JJ (1983) A chordotonal organ inhibits giant interneurones in the sixth abdominal ganglion of the cockroch 153A:377
Betz M, see Rübsamen R
Betz M, see Vater M, et al
Bevengut M, see Rathmayer W
Beyenbach KW, see Williams JC Jr, et al
Bhatt D, Chandola A (1985) Circannual rhythm of food intake in spotted munia and its phase relationship with fattening and reproductive cycles 156:429
Biesinger R, see Götz KG
Bilo A, see Bilo D
Bilo D, Bilo A (1983) Neck flexion related activity of flight control muscles in the flow-stimulated pigeon 153A:111
Bishop PJ, see Passmore NI, et al
Bitterman ME, see Walker MM
Blest AD (1985) Retinal mosaics of the principal eyes of jumping spiders (Salticidae) in some neotropical habitats: optical tradeoffs between sizes and habitat illuminances 157:391
Blickhan R, Barth FG (1985) Strains in the exoskeleton of spiders 157:115
Block GD, McMahon DG (1984) Cellular analysis of the *Bulla* ocular circadian pacemaker system. III. Localization of the circadian pacemaker 155:387
Block GD, McMahon DG, Wallace SF, Friesen WO (1984) Cellular analysis of the *Bulla* ocular circadian pacemaker system. I. A model for retinal organization 155:365
Block GD, see McMahon DG, et al
Blum MS, see Fletcher DJC
Bodenhamer RD, Pollak GD (1983) Response characteristics of single units in the inferior colliculus of mustache bats to sinusoidally frequency modulated signals 153A:67
Bodznick D, Preston DG (1983) Physiological characterization of electroreceptors in the lampreys *Ichthyomyzon unicuspis* and *Petromyzon marinus* 152A:209
Bodznick D, see Ronan MC
Boeckh J, see Bogner F, et al
Bogner F, Boppré M, Ernst K-D, Boeckh J (1986) CO_2 sensitive receptors on labial palps of *Rhodogastria* moths (Lepidoptera: Arctiidae): physiology, fine structure and central projection 158:741
Bone Q (1985) Epithelial action potentials in *Oikopleura* (Tunicata: Larvacea) 156:117
Bont AMT de, see Zwaan A de, et al
Boppré M, Schneider D (1985) Pyrrolizidine alkaloids quantitatively regulate both scent organ morphogenesis and pheromone biosynthesis in male *Creatonotos* moths (Lepidoptera: Arctiidae) 157:569
Boppré M, see Bogner F, et al
Borbély AA, see Tobler I
Borroni PF, see Johnson BR, et al
Borst A (1983) Computation of olfactory signals in *Drosophila melanogaster* 152A:373
Bos NPA, see Maat A ter, et al
Botta L, see Valli P, et al
Boutilier RG, see Glass ML, et al
Bowdan E (1984) Electrophysiological responses of tarsal contact chemoreceptors of the apple maggot fly *Rhagoletis pomonella* to salt, sucrose and oviposition-deterrent pheromone 154:143
Bowdan E, Dethier VG (1986) Coordination of a dual inhibitory system regulating feeding behaviour in the blowfly 158:713
Bowmaker JK, Martin GR (1985) Visual pigments and oil droplets in the penguin, *Spheniscus humboldti 156*:71
Bowmaker JK, see Downing JEG, et al
Boyan GS (1983) Postembryonic development in the auditory system of the locust. Anatomical and physiological characterisation of interneurones ascending to the brain 151A:499
Boyan GS (1985) Auditory input to the flight system of the locust 156:79
Boyan GS (1986) Modulation of auditory responsiveness in the locust 158:813
Boyan GS, Altman JS (1985) The suboesophageal ganglion: a 'missing link' in the auditory pathway of the locust 156:413
Boyan GS, Ball EE (1986) Wind-sensitive interneurones in the terminal ganglion of praying mantids 159:773
Boyan GS, Fullard JH (1986) Interneurones responding to sound in the tobacco budworm moth *Heliothis virescens* (Noctuidae): morphological and physiological characteristics 158:391
Boyd P, Kühne R, Silver S, Lewis B (1984) Two-tone suppression and song coding by ascending neurones in the cricket *Gryllus campestris* L. 154:423
Boyd P, Lewis B (1983) Peripheral auditory directionality in the cricket (*Gryllus campestris* L., *Teleogryllus oceanicus* Le Guillou) 153A:523
Brace RC, see Tattersall JEH
Bräunig P (1987) The satellite nervous system – an extensive neurohemal network in the locust head 160:69
Bräunig P, Hustert R (1985) Actions and interactions of proprioceptors of the locust hind leg coxo-trochanteral joint. I. Afferent responses in relation to joint position and movement 157:73
Bräunig P, Hustert R (1985) Actions and interactions of proprioceptors of the locust hind leg coxo-trochanteral joint. II. Influence on the motor system 157:83
Breckow J, Sippel M (1985) Mechanics of the transduction of sound in the tympanal organ of adults and larvae of locusts 157:619
Breckow J, see Sippel M
Breer H, Heilgenberg H (1985) Neurochemistry of GABAergic activities in the central nervous system of *Locusta migratoria* 157:343
Brenowitz EA, Wilczynski W, Zakon HH (1984) Acoustic communication in spring peepers. Environmental and behavioral aspects 155:585
Brenowitz EA, see Rose GJ, et al
Brenowitz EA, see Wilczynski W, et al
Brodfuehrer PD, Friesen WO (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. I. Output connections of Tr1 and Tr2 159:489
Brodfuehrer PD, Friesen WO (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. II. Role of segmental swim-initiating interneurons 159:503
Brodfuehrer PD, Friesen WO (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. III. Sensory inputs to Tr1 and Tr2 159:511
Brownell PH, see Ligman SH
Brückner D, see Getz WM, et al
Brunnarius J, Dumortier B (1984) Existence of a light-sensitive phase in the photoperiodic termination of diapause in *Pieris brassicae* L. (Insecta: Lepidoptera) and comparison with diapause induction 155:161
Brunner M, see Koch UT
Bryceson KP (1986) Diurnal changes in photoreceptor sensitivity in a reflecting superposition eye 158:573
Bryceson KP, McIntyre P (1983) Image quality and acceptance angle in a reflecting superposition eye 151A:367
Buchberger A, see Steinlechner S , et al
Buchner E, Buchner S, Bülthoff I (1984) Deoxyglucose mapping of nervous activity induced in *Drosophila* brain by visual movement. I. Wildtype 155:471
Buchner E, see Bülthoff I
Buchner S, see Buchner E, et al
Budelmann BU, see Williamson R
Buiatti M, see Scapini F

Bülthoff I (1986) Deoxyglucose mapping of nervous activity induced in *Drosophila* brain by visual movement. III. *Outer rhabdomeres absent*^{JK84}, *small optic lobes* ^{KS58} and *no object fixation* E^{B12}, visual mutants 158:195
Bülthoff I, Buchner E (1985) Deoxyglucose mapping of nervous activity induced in *Drosophila* brain by visual movement. II. *Optomotor blind*^{H31} and *lobula plate-less*^{N684}, visual mutants 156:25
Bülthoff I, see Buchner E, et al
Burghagen H, Ewert J-P (1983) Influence of the background for discriminating object motion from self-induced motion in toads *Bufo bufo* (L.) 152A:241
Burghardt F, see Atkins G, et al
Burkhardt D, Motte I de la (1983) How stalk-eyed flies eye stalk-eyed flies: observations and measurements of the eyes of *Cyrtodiopsis whitei* (Diopsidae Diptera) 151A:407
Burrows M, see Pflüger H-J
Bush BMH, see Cannone AJ

C

Cagol E, see Rayer B, et al
Calabrese RL, Maranto AR (1984) Neural control of the hearts in the leech, *Hirudo medicinalis*. III. Regulation of myogenicity and muscle tension by heart accessory neurons 154:393
Calabrese RL, see Arbas EA
Calabrese RL, see Maranto AR
Calford MB, Wise LZ, Pettigrew JD (1985) Coding of sound location and frequency in the auditory midbrain of diurnal birds of prey, families Accipitridae and Falconidae 157:149
Callec JJ, see Bernard J, et al
Camhi JM, see Comer C
Cannone AJ (1987) Crustacean elastic strand receptors that function without impulses. I. The depressor receptor in the shore crab. *Carcinus maenas* 160:599
Cannone AJ, Bush BMH (1983) Dual reflex motor control of non-spiking crab muscle receptor. II. Reinforcement of RmI mediated positive feedback by dual afferent excitation of Rm2 153A:309
Cappell MS, see Susswein AJ, et al
Capranica RR, see Megela AL
Capranica RR, see Mudry KM
Capranica RR, see Passmore NI, et al
Capranica RR, see Rose GJ
Capranica RR, see Rose GJ, et al
Carr C, see Hagedorn M
Carr WES, Gleeson RA, Ache BW, Milstead ML (1986) Olfactory receptors of the spiny lobster: ATP-sensitive cells with similarities to P_2-type purinoceptors of vertebrates 158:331
Carr WES, Thompson HW (1983) Adenosine 5′-monophosphate, an internal regulatory agent, is a potent chemoattractant for a marine shrimp 153A:47
Carr WES, see Derby CD, et al
Cartwright BA, Collett TS (1983) Landmark learning in bees. Experiments and models 151A:521
Cartwright BA, see Collett TS, et al
Case JF, see Hiller-Adams P
Casella C, see Valli P, et al
Cassone VM, Menaker M (1985) Circadian rhythms of house sparrows are phase-shifted by pharmacological manipulation of brain serotonin 156:145
Castellini MA, see Kooyman GL, et al
Cattaert D, Clarac F (1987) Rami motor neurons and motor control of the swimmeret system of *Homarus gammarus* 160:55
Chamberlin ME, Phillips JE (1983) Oxidative metabolism in the locust rectum 151B:191
Chandola A, see Bhatt D
Chandrashekaran MK, see Joshi D
Chang S-B, see Kirschvink JL, et al
Chase R, Wells MJ (1986) Chemotactic behaviour in *Octopus* 158:375
Chen D-M, Goldsmith TH (1986) Four spectral classes of cone in the retinas of birds 159:473
Cheng K, Collett TS, Wehner R (1986) Honeybees learn the colours of landmarks 159:69
Cherry JD, see Able KP
Childress J, see McFall-Ngai M, et al
Chino H, see Chinzei Y, et al
Chinzei Y, Chino H, Takahashi K (1983) Purification and properties of vitellogenin and vitellin from a tick, *Ornithodoros moubata* 152B:13
Christensen TA, Hildebrand JG (1987) Male-specific, sex pheromone-selective projection neurons in the antennal lobes of the moth *Manduca sexta* 160:553
Claas B, see Münz H, et al
Claas B, see Zittlau KE, et al
Claiborne BJ, Selverston AI (1984) Localization of stomatogastric IV neuron cell bodies in lobster brain 154:27
Clarac F, see Cattaert D
Clark L, see Arzt AH, et al
Clarke JDW, see Roberts A
Clarke JDW, see Soffe SR, et al
Clopton JR (1984) Mosquito circadian and circa-bi-dian flight rhythms: a two-oscillator model 155:1
Cochran SL, see Dieringer N, et al
Cock Buning T de (1983) Thresholds of infrared sensitive tectal neurons in *Python reticulatus*, *Boa constrictor* and *Agkistrodon rhodostoma* 151A:461
Cohen AH (1987) Intersegmental coordinating system of the lamprey central pattern generator for locomotion 160:181
Cohen JL, Gruber SH (1985) Spectral input to lemon shark (*Negaprion brevirostris*) ganglion cells 156:579
Čokl A, Otto C, Kalmring K (1985) The processing of directional vibratory signals in the ventral nerve cord of *Locusta migratoria* 156:45
Coles JA, Rick R (1985) An electron microprobe analysis of photoreceptors and outer pigment cells in the retina of the honeybee drone 156:213
Collett TS (1987) The use of visual landmarks by gerbils: Reaching a goal when landmarks are displaced 160:109
Collett TS, Cartwright BA, Smith BA (1986) Landmark learning and visuo-spatial memories in gerbils 158:835
Collett TS, see Cartwright BA
Collett TS, see Cheng K, et al
Collett TS, see Douglas RH, et al
Collett TS, see Zanker JM
Collis CS (1984) The effects of drugs and ions on melanophore pigment movements and transmembrane potentials of stoneloach (*Noemacheilus*) 154:121
Comer C, Camhi JM (1984) Behavioral compensation for altered cercal position in the cockroach 155:31
Comer CM, Dowd JP (1987) Escape turning behavior of the cockroach. Changes in directionality induced by unilateral lesions of the abdominal nervous system 160:571
Consi TR, Macagno ER (1985) The spectral sensitivity of eye movements in response to light flashes in *Daphnia magna* 156:135
Constantine-Paton M, see Gorlick DL, et al
Cooke IM, see Tazaki K
Coombe PE (1984) The role of retinula cell types in fixation behaviour of walking *Drosophila melanogaster* 155:661
Coombe PE (1986) The large monopolar cells L1 and L2 are responsible for ERG transients in *Drosophila* 159:655
Copenhaver PF, Truman JW (1986) Control of neurosecretion in the moth *Manduca sexta*: Physiological regulation of the eclosion hormone cells 158:445
Corbière-Tichané G, Loftus R (1983) Antennal thermal receptors of the cave beetle, *Speophyes lucidulus* Delar. II. Cold receptor response to slowly changing temperature 153A:343
Cork SJ, Hume ID (1983) Microbial digestion in the koala (*Phascolarctos cinereus*, Marsupialia), an arboreal folivore 152B:131
Cork SJ, Hume ID, Dawson TJ (1983) Digestion and metabolism of a natural foliar diet (*Eucalyptus punctata*) by an arboreal marsupial, the koala (*Phascolarctos cinereus*) 153B:181
Cork SJ, Warner ACI (1983) The passage of digesta markers through the gut of a folivorous marsupial, the koala *Phascolarctos cinereus* 152B:43
Cornell JC, Jungreis AM (1983) Potassium transport in the isolated pharate pupal integument of the tobacco hornworm, *Manduca sexta* 153B:147
Coro F, Pérez M (1984) Intensity coding by auditory receptors in *Empyreuma pugione* (Lepidoptera, Ctenuchidae) 154:287
Coro F, see Pérez M
Costa CJ, Pierce SK (1983) Volume regulation in the red coelomocytes of *Glycera dibranchiata*: an interaction of amino acid and K^+ effluxes 151B:133
Crawford JD, Hagedorn M, Hopkins CD

(1986) Acoustic communication in an electric fish, *Pollimyrus isidori* (Mormyridae) 159:297
Crescitelli F, McFall-Ngai M, Horwitz J (1985) The visual pigment sensitivity hypothesis: further evidence from fishes of varying habitats 157:323
Crescitelli F, see McFall-Ngai M, et al
Crognale M, see Jacobs GH, et al
Cronin TW (1985) The visual pigment of a stomatopod crustacean, *Squilla empusa* 156:679
Cruse H, Dean J, Suilmann M (1984) The contributions of diverse sense organs to the control of leg movement by a walking insect 154:695
Cugnoli C, see Schwemer J, et al
Cummins DR, Goldsmith TH (1986) Responses of crayfish photoreceptor cells following intense light adaptation 158:35
Curio E, see Klump GM, et al

D

Daan S, see Gänshirt G, et al
Dagan D, see Benshalom G
Daigle KR, see Bennett MF
Dambach M, see Heinzel H-G
Dashow L, Epple A (1983) Effects of exogenous catecholamines on plasma catecholamines and glucose in the sea lamprey, *Petromyzon marinus* 152B:35
Datum K-H, Weiler R, Zettler F (1986) Immunocytochemical demonstration of γ-amino butyric acid and glutamic acid decarboxylase in R7 photoreceptors and C2 centrifugal fibres in the blowfly visual system 159:241
Davis FC, Gorski RA (1984) Unilateral lesions of the hamster suprachiasmatic nuclei: evidence for redundant control of circadian rhythms 154:221
Davis JP, Stephens GC (1983) Determination of net flux of 14 amino acids in *Tetrahymena pyriformis* 152B:27
Davis RW (1983) Lactate and glucose metabolism in the resting and diving harbor seal (*Phoca vitulina*) 153B:275
Davis RW, see Kooyman GL, et al
Dawson TJ, Herd RM, Skadhauge E (1983) Water turnover and body water distribution during dehydration in a large arid-zone bird, the Emu, *Dromaius novaehollandiae* 153B:235
Dawson TJ, see Cork SJ, et al
Day N, see Finlayson LH, et al
Dean J (1984) Control of leg protraction in the stick insect: a targeted movement showing compensation for externally applied forces 155:771
Dean J, see Cruse H, et al
Debski EA, Friesen WO (1987) Intracellular stimulation of sensory cells elicits swimming activity in the medicinal leech 160:447
DeCoursey PJ (1986) Light-sampling behavior in photoentrainment of a rodent circadian rhythm 159:161
DeHaan CH, see Stout JF, et al
Deitmer JW, Machemer H, Martinac B (1984) Motor control in three types of ciliary organelles in the ciliate *Stylonychia* 154:113
Dekker K, see Groot JA, et al
Delaney K, Gelperin A (1986) Post-ingestive food-aversion learning to amino acid deficient diets by the terrestrial slug *Limax maximus* 159:281
Delius JD, see Schall U
Demaine C, see Semm P
Demaine C, see Semm P, et al
Dement WC, see Welsh DK, et al
Denaro M, see Schulz S, et al
Derby CD, Carr WES, Ache BW (1984) Purinergic olfactory cells of crustaceans: response characteristics and similarities to internal purinergic cells of vertebrates 155:341
DeSimone JA, see Getchell ML , et al
Dethier VG, see Bowdan E
Diamond JM, see Karasov WH
DiCaprio RA, Fourtner CR (1984) Neural control of ventilation in the shore crab, *Carcinus maenas*. I. Scaphognathite motor neurons and their effect on the ventilatory rhythm 155:397
Dickinson MH, Lent ChM (1984) Feeding behavior of the medicinal leech, *Hirudo medicinalis* L. 154:449
Dickinson MH, see Lent ChM
Dieringer N, Cochran SL, Precht W (1983) Differences in the central organization of gaze stabilizing reflexes between frog and turtle 153A:495
Dieringer N, Precht W (1986) Functional organization of eye velocity and eye position signals in abducens motoneurons of the frog 158:179
Dijcks FA, see Maat A ter, et al
Distel H, Hudson R (1985) The contribution of the olfactory and tactile modalities to the nipple-search behaviour of newborn rabbits 157:599
Distel H, see Hudson R
Dizon AE, see Kirschvink JL, et al
Djamgoz MBA, see Downing JEG, et al
Doherty JA (1985) Trade-off phenomena in calling song recognition and phonotaxis in the cricket, *Gryllus bimaculatus* (Orthoptera, Gryllidae) 156:787
Doherty JA (1985) Phonotaxis in cricket, *Gryllus bimaculatus* DeGeer: comparisons of choice and no-choice paradigms 157:279
Doherty JA, Gerhardt HC (1984) Acoustic communication in hybrid treefrogs: sound production by males and selective phonotaxis by females 154:319
Doolan JM, Pollack GS (1985) Phonotactic specificity of the cricket *Teleogryllus oceanicus*: intensity-dependent selectivity for temporal parameters of the stimulus 157:223
Dörrscheidt GJ, see Rübsamen R
Douglas RH (1986) Photopic spectral sensitivity of a teleost fish, the roach (*Rutilus rutilus*), with special reference to its ultraviolet sensitivity 159:415
Douglas RH, Collett TS, Wagner H-J (1986) Accommodation in anuran Amphibia and its role in depth vision 158:133
Doujak FE (1984) Electrophysiological measurement of photoreceptor membrane dichroism and polarization sensitivity in a Grapsid crab 154:597
Dowd JP, see Comer CM
Downing JEG, Djamgoz MBA, Bowmaker JK (1986) Photoreceptors of a cyprinid fish, the roach: morphological and spectral characteristics 159:859
Dryl S, see Hildebrand E
Dubs A, see Howard J, et al
Dudai Y, Zvi S, Segel S (1984) A defective conditioned behavior and a defective adenylate cyclase in the *Drosophila* mutant *rutabaga* 155:569
Dudel J, see Franke Ch, et al
Duman JG, see Horwath KL
Dumont JPC, see Kirk MD, et al
Dumortier B, see Brunnarius J
Dunham DW, Schöne H (1984) Substrate slope and orientation in a land hermit crab, *Coenobita clypeatus* (Decapoda, Coenobitidae) 154:511
Dyer FC (1985) Mechanisms of dance orientation in the Asian honey bee *Apis florea* L. 157:183
Dyer FC (1987) Memory and sun compensation by honey bees 160:621

E

Eaton RC, Nissanov J, Wieland CM (1984) Differential activation of Mauthner and non-Mauthner startle circuits in the zebrafish: Implications for functional substitution 155:813
Ebbesson SOE, see Finkenstädt T, et al
Ebihara S, Uchiyama K, Oshima I (1984) Circadian organization in the pigeon, *Columba livia:* the role of the pineal organ and the eye 154:59
Echteler SM (1985) Organization of central auditory pathways in a teleost fish, *Cyprinus carpio 156:*267
Eckert H, see Land MF
Eguchi E, Horikoshi T (1984) Comparison of stimulus-response (V-log I) functions in five types of lepidopteran compound eyes (46 species) 154:3
Ehret G, Moffat AJM (1985) Inferior colliculus of the house mouse. II. Single unit responses to tones, noise and tone-noise combinations as a function of sound intensity 156:619
Ehret G, Moffat AJM (1985) Inferior colliculus of the house mouse. III. Response probabilities and thresholds of single units to synthesized mouse calls compared to tone and noise bursts 156:637
Elepfandt, A (1984) The role of ventral lateral line organs in water wave localization in the clawed toad (*Xenopus laevis*) 154:773
Elepfandt A (1986) Wave frequency recognition and absolute pitch for water waves in the clawed frog, *Xenopus laevis* 158:235

Elepfandt A, Seiler B, Aicher B (1985) Water wave frequency discrimination in the clawed frog, *Xenopus laevis* 157:255
Elepfandt A, Wiedemer L (1987) Lateral-line responses to water surface waves in the clawed frog, *Xenopus laevis* 160:667
Ellington WR (1983) Phosphorus nuclear magnetic resonance studies of energy metabolism in molluscan tissues: Effect of anoxia and ischemia on the intracellular pH and high energy phosphates in the ventricle of the whelk, *Busycon contrarium* 153 B:159
Elliott EJ (1986) Chemosensory stimuli in feeding behavior of the leech *Hirudo medicinalis* 159:391
Emde G von der, Schnitzler H-U (1986) Fluttering target detection in Hipposiderid bats 159:765
Engel EMRA, see Welsh DK, et al
Epple A, see Dashow L
Erber J, see Kaulen P, et al
Erber J, see Mercer AR
Erickson MT, see Walters ET
Erickson RP, see Maes FW
Ernst K-D, see Bogner F, et al
Erxleben C, see Rathmayer W
Escudié B, see Simmons JA, et al
Evans RE, see Marui T, et al
Ewer J, see Hooper SL, et al
Ewert J-P, see Burghagen H
Ewert J-P, see Finkenstädt T
Ewert J-P, see Finkenstädt T, et al
Ewert J-P, see Laming PR
Ewert J-P, see Matsumoto N, et al
Ewert J-P, see Satou M

F

Farner DS, see Moore MC, et al
Felbeck H (1983) Sulfide oxidation and carbon fixation by the gutless clam *Solemya reidi*: an animal-bacteria symbiosis 152 B:3
Feng AS, see Vater M, et al
Fent K (1986) Polarized skylight orientation in the desert ant *Cataglyphis* 158:145
Fernald RD (1985) Eye movements in the African cichlid fish, *Haplochromis burtoni* 156:199
Fernald RD, see Allen EE
Fernald RD, see Muske LE
Ferraris RP, Ahearn GA (1983) Intestinal glucose transport in carnivorous and herbivorous marine fishes 152 B:79
Fievet B, see Thomas S, et al
Finger TE, see Silver WL
Finger W, Martin C (1986) Spontaneous excitatory postsynaptic currents in crayfish neuromuscular junctions in the absence and presence of serotonin and 3,4-diaminopyridine 159:13
Finkenstädt T, Adler NT, Allen TO, Ebbesson SOE, Ewert J-P (1985) Mapping of brain activity in mesencephalic and diencephalic structures of toads during presentation of visual key stimuli: a computer assisted analysis of (^{14}C)2DG autoradiographs 156:433
Finkenstädt T, Adler NT, Allen TO, Ewert J-P (1986) Regional distribution of glucose utilization in the telencephalon of toads in response to configurational visual stimuli: a ^{14}C-2 DG study 158:457
Finkenstädt T, Ewert J-P (1983) Processing of area dimensions of visual key stimuli by tectal neurons in *Salamandra salamandra* 153 A:85
Finkenstädt T, Ewert J-P (1983) Visual pattern discrimination through interactions of neural networks: a combined electrical brain stimulation, brain lesion, and extracellular recording study in *Salamandra salamandra* 153 A:99
Finlayson LH, Orchard I, Day N (1983) A factor in the haemolymph of the stick insect that depresses the activity of extraganglionic neurosecretory cells 152 A:283
Fisher S, see Williams DS, et al
Fleischer AB, see Miller GV, et al
Fleishman LJ (1986) Motion detection in the presence and absence of background motion in an *Anolis* lizard 159:711
Fletcher DJC, Blum MS (1983) The inhibitory pheromone of queen fire ants: effects of disinhibition on dealation and oviposition by virgin queens 153 A:467
Fletcher DJC, see Vargo EL
Flieger E, see Schnitzler H-U
Foà A, Bagnoli P, Giongo F (1986) Homing pigeons subjected to section of the anterior commissure can build up two olfactory maps in the deflector lofts 159:465
Foà A, see Wallraff HG, et al
Follett BK, see Foster RG
Foster RG, Follett BK (1985) The involvement of a rhodopsin-like photopigment in the photoperiodic response of the Japanese quail 157:519
Fourtner CR, see DiCaprio RA
Franke Ch, Hatt H, Dudel J (1986) The excitatory glutamate-activated channel recorded in cell-attached and excised patches from the membranes of tail, leg and stomach muscles of crayfish 159:579
Franke Ch, Hatt H, Dudel J (1986) The inhibitory chloride channel activated by glutamate as well as γ-amino-butyric acid (GABA). Single channel recordings from crayfish muscle 159:591
Franke H-D (1985) On a clocklike mechanism timing lunar-rhythmic reproduction in *Typosyllis prolifera* (Polychaeta) 156:553
Franke H-D (1986) Resetting a circalunar reproduction rhythm with artificial moonlight signals: Phase-response curve and moon-off effect 159:569
French AS (1984) Action potential adaptation in the femoral tactile spine of the cockroach, *Periplaneta americana* 155:803
French AS (1985) The effects of temperature on action potential encoding in the cockroach tactile spine 156:817
French AS (1986) Strength-duration properties of a rapidly adapting insect sensory neuron 159:757
French AS, Kuster JE (1985) Nonlinearities in locust photoreceptors during transduction of small numbers of photons 156:645
French AS, see Watts RE
Fricke RA, Kennedy D (1983) Inhibition of mechanosensory neurons in the crayfish. III. Presynaptic inhibition of primary afferents by a central proprioceptive tract 153 A:443
Friesen WO (1985) Neuronal control of leech swimming movements: interactions between cell 60 and previously described oscillator neurons 156:231
Friesen WO, see Block GD, et al
Friesen WO, see Brodfuehrer PD
Friesen WO, see Debski EA
Fritzsch B, see Münz H, et al
Frixione E, Porter RM (1986) Volume and surface changes of smooth endoplasmic reticulum in crayfish retinula cells upon light- and dark-adaptation 159:667
Fuchs JL (1983) Effects of pinealectomy and subsequent melatonin implants on activity rhythms in the house finch (*Carpodacus mexicanus*) 153 A:413
Fujita I, see Satou M, et al
Fukushi T (1985) Visual learning in walking blowflies, *Lucilia cuprina* 157:771
Fullard JH (1984) Listening for bats: pulse repetition rate as a cue for a defensive behavior in *Cycnia tenera* (Lepidoptera: Arctiidae) 154:249
Fullard JH (1984) External auditory structures in two species of neotropical notodontid moths 155:625
Fullard JH (1984) Acoustic relationships between tympanate moths and the Hawaiian hoary bat (*Lasiurus cinereus semotus*) 155:795
Fullard JH, see Boyan GS
Füller E, Kowalski U, Wiltschko R (1983) Orientation of homing pigeons: compass orientation vs piloting by familiar landmarks 153 A:55

G

Gailey DA, see Jackson FR, et al
Gaillard F (1985) Binocularly driven neurons in the rostral part of the frog optic tectum 157:47
Gänshirt G, Daan S, Gerkema MP (1984) Arrhythmic perch hopping and rhythmic feeding of starlings in constant light: separate circadian oscillators? 154:669
Gelperin A, see Delaney K
Gemperlein R, see Paul R, et al
Gemperlein R, see Steiner A , et al
Gentle MJ (1987) Facial nerve sensory responses recorded from the geniculate ganglion of *Gallus gallus* var. *domesticus* 160:683
Gerhardt HC, see Doherty JA
Gerkema MP, see Gänshirt G, et al
Getchell ML, Getchell TV (1984) β-Adrenergic regulation of the secretory granule content of acinar cells in olfactory glands of the salamander 155:435

Getchell ML, Zielinski B, DeSimone JA, Getchell TV (1987) Odorant stimulation of secretory and neural processes in the salamander olfactory mucosa 160:155
Getchell TV, see Getchell ML
Getchell TV, see Getchell ML , et al
Getz WM, Brückner D, Smith KB (1986) Conditioning honeybees to discriminate between heritable odors from full and half sisters 159:251
Getz WM, Smith KB (1987) Olfactory sensitivity and discrimination of mixtures in the honeybee *Apis mellifera* 160:239
Giongo F, see Foà A, et al
Glantz RM, Wang-Bennett LT, Waldrop B (1985) Presynaptic inhibition in the crayfish brain. Inhibition of a central synapse and synaptic events in presynaptic terminals 156:477
Glantz RM, see Sabra R
Glantz RM, see Waldrop B
Glantz RM, see Wang-Bennett LT
Glass ML, Boutilier RG, Heisler N (1983) Ventilatory control of arterial P_{O_2} in the turtle *Chrysemys picta bellii*: effects of temperature and hypoxia 151B:145
Gleeson RA, see Carr WES, et al
Gleich O, see Manley GA, et al
Gnatzy W, see Bender M, et al
Gobin B, see Bernard J, et al
Gogala M, see Surlykke A
Goldsmith TH (1986) Interpreting trans-retinal recordings of spectral sensitivity 159:481
Goldsmith TH, see Chen D-M
Goldsmith TH, see Cummins DR
Goldspink G, see Sidell BD, et al
Golowasch J, see Hooper SL, et al
Gorlick DL, Constantine-Paton M, Kelley DB (1984) A ^{14}C-2-deoxyglucose autoradiographic investigation of sensory inputs to the optic tectum of *Rana pipiens* 154:617
Gorski RA, see Davis FC
Götz KG, Biesinger R (1985) Centrophobism in *Drosophila melanogaster*. I. Behavioral modification induced by ether 156:319
Götz KG, Biesinger R (1985) Centrophobism in *Drosophila melanogaster*. II. Physiological approach to search and search control 156:329
Govardovskiĭ VI, Lychakov DV (1984) Visual cells and visual pigments of the lamprey, *Lampetra fluviatilis* 154:279
Grau HJ, Bastian J (1986) Neural correlates of novelty detection in pulse-type weakly electric fish 159:191
Gray DA, Simon E (1983) Mammalian and avian antidiuretic hormone: studies related to possible species variation in osmoregulatory systems 151B:241
Grega DS, Prior DJ (1985) The effects of feeding on heart activity in the terrestrial slug, *Limax maximus*: central and peripheral control 156:539
Greggers U, see Menzel R
Greggers U, see Menzel R, et al
Grinnell AD, see Roverud RC
Griss C, Rowell CHF (1986) Three descending interneurons reporting deviation from course in the locust. I. Anatomy 158:765
Grobstein P, Reyes A, Zwanziger L, Kostyk SK (1985) Prey orienting in frogs: Accounting for variations in output with stimulus distance 156:775
Groot JA, Albus H, Bakker R, Dekker K (1983) Changes in sugar transport and in electrophysiological characteristics of intestinal preparations of temperature-acclimated goldfish (*Carassius auratus* L.) 151B:163
Gross C, see Kriebel ME , et al
Gruber SH, see Cohen JL
Guderley H, Hamel L, Lafond J (1983) Close resemblance between muscle pyruvate kinase from a primitive vertebrate, the river sturgeon *Acipenser fulvenscens*, and the ancestral type K isozyme 153B:247
Gynther IC, see Pearson KG, et al

H

Habersetzer J, Marimuthu G (1986) Ontogeny of sounds in the echolocating bat *Hipposideros speoris* 158:247
Habersetzer J, Schuller G, Neuweiler G (1984) Foraging behavior and Doppler shift compensation in echolocating hipposiderid bats, *Hipposideros bicolor* and *Hipposideros speoris* 155:559
Habersetzer J, Vogler B (1983) Discrimination of surface-structured targets by the echolocating bat *Myotis myotis* during flight 152A:275
Habibi H, Ince BW, Matty AJ (1983) Effects of 17-α-methyltestosterone and 17-β-oestradiol on intestinal transport and absorption of L-(^{14}C)-leucine in vitro in rainbow trout (*Salmo gairdneri*) 151B:247
Hackbarth H, see Schnitzler H-U, et al
Hadley NF, see Quinlan MC
Haerter UL, see Wetzel DM, et al
Haftorn S, see Reinertsen RE
Hagedorn HH, see Williams JC Jr, et al
Hagedorn M, Carr C (1985) Single electrocytes produce a sexually dimorphic signal in South American electric fish, *Hypopomus occidentalis* (Gymnotiformes, Hypopomidae) 156:511
Hagedorn M, see Crawford JD, et al
Hale C, see Simmons JA, et al
Hall J (1985) Neuroanatomical and neurophysiological aspects of vibrational processing in the central nervous system of semi-terrestrial crabs. I. Vibration sensitive interneurons in the fiddler crab, *Uca minax* 157:91
Hall J (1985) Neuroanatomical and neurophysiological aspects of vibrational processing in the central nervous system of semi-terrestrial crabs. II. Comparative anatomical and physiological aspects of stimulus processing 157:105
Hallonquist JD, see Lees JG, et al
Hallonquist JD, see Mrosovsky N
Hamdorf K, Höglund G, Juse A (1986) Ultraviolet and blue induced migration of screening pigment in the retina of the moth *Deilephila elpenor* 159:353
Hamdorf K, see Hochstrate P
Hamel L, see Guderley H, et al
Hamilton PV, Ardizzoni SC, Penn JS (1983) Eye structure and optics in the intertidal snail, *Littorina irrorata* 152A:435
Hannigan P, Kelley DB (1986) Androgen-induced alterations in vocalizations of female *Xenopus laevis*: modifiability and constraints 158:517
Hara TJ, see Marui T, et al
Hara TJ, see Sorensen PW , et al
Harada S, see Marui T, et al
Haragashira M, see Tatsumi H, et al
Hardie RC (1984) Properties of photoreceptors R7 and R8 in dorsal marginal ommatidia in the compound eyes of *Musca* and *Calliphora* 154:157
Harms G, see Maes FW
Harris-Warrick RM (1985) Amine modulation of extension command element-evoked motor activity in the lobster abdomen 156:875
Hartman HB (1985) Tension receptors on the closer muscle apodeme in the walking legs of the blue crab, *Callinectes sapidus* 157:355
Hassan El-S (1986) On the discrimination of spatial intervals by the blind cave fish (*Anoptichthys jordani*) 159:701
Hateren JH van (1984) Waveguide theory applied to optically measured angular sensitivities of fly photoreceptors 154:761
Hateren JH van (1986) Electrical coupling of neuro-ommatidial photoreceptor cells in the blowfly 158:795
Hateren JH van, see Smakman JGJ, et al
Hatt H (1983) Temperature dependence of the response of the pyridine-sensitive units in the crayfish walking leg 152A:395
Hatt H (1983) Effect of temperature on the activity of the amino acid receptors in the crayfish walking leg 152A:405
Hatt H (1984) Structural requirements of amino acids and related compounds for stimulation of receptors in crayfish walking leg 155:219
Hatt H (1986) Responses of a bimodal neuron (chemo- and vibration-sensitive) on the walking legs of the crayfish 159:611
Hatt H, Schmiedel-Jakob I (1984) Electrophysiological studies of pyridine-sensitive units on the crayfish walking leg. I. Characteristics of stimulatory molecules 154:855
Hatt H, see Franke Ch, et al
Hawryshyn CW, McFarland WN (1987) Cone photoreceptor mechanisms and the detection of polarized light in fish 160:459
Hector DH, see Suthers RA
Hedwig B (1986) On the role in stridulation of plurisegmental interneurons of the acridid grasshopper *Omocestus viridulus* L. I. Anatomy and physiology of descending cephalothoracic interneurons 158:413
Hedwig B (1986) On the role in stridulation of plurisegmental interneurons of the acridid grasshopper *Omocestus viridulus* L. II.

Anatomy and physiology of ascending and T-shaped interneurons 158:429
Hedwig B, Pearson KG (1984) Patterns of synaptic input to identified flight motoneurons in the locust 154:745
Heilgenberg H, see Breer H
Heiligenberg W, Rose G (1986) Gating of sensory information: Joint computations of phase and amplitude data in the midbrain of the electric fish, *Eigenmannia* 159:311
Heiligenberg W, see Meyer JM, et al
Heiligenberg W, see Neuweiler G
Heiligenberg W, see Rose G
Heiligenberg W, see Rose G , et al
Heilmann U, see Schnitzler H-U, et al
Heinzel H-G, Dambach M (1987) Travelling air vortex rings as potential communication signals in a cricket 160:79
Heisler N, see Glass ML, et al
Heitler WJ, see Pearson KG, et al
Heldmaier G, see Steinlechner S , et al
Helversen D von (1984) Parallel processing in auditory pattern recognition and directional analysis by the grasshopper *Chorthippus biguttulus* L. (Acrididae) 154:837
Helversen D von, see Ronacher B, et al
Helversen O von, see Wolf H
Helversen O von, see Ronacher B, et al
Hemelraad J, see Zwaan A de, et al
Hennessey TM, Saimi Y, Kung C (1983) A heat-induced depolarization of *Paramecium* and its relationship to thermal avoidance behavior 153A:39
Henson OW Jr, Schuller G, Vater M (1985) A comparative study of the physiological properties of the inner ear in Doppler shift compensating bats (*Rhinolophus rouxi* and *Pteronotus parnellii*) 157:587
Herbert H, see Schnitzler H-U, et al
Herd RM, see Dawson TJ, et al
Hergenröder R, Barth FG (1983) The release of attack and escape behavior by vibratory stimuli in a wandering spider (*Cupiennius salei* Keys.) 152A:347
Hergenröder R, Barth FG (1983) Vibratory signals and spider behavior: How do the sensory inputs from the eight legs interact in orientation? 152A:361
Hernández N, see Williams B, et al
Herness MS (1987) Effect of amiloride on bulk flow and iontophoretic taste stimuli in the hamster 160:281
Hertel H (1983) Change of synapse frequency in certain photoreceptors of the honeybee after chromatic deprivation 151A:477
Hertel H, see Menzel R, et al
Hess BJM, see Knöpfel T, et al
Hess E, Loftus R (1984) Warm and cold receptors of two sensilla on the foreleg tarsi of the tropical bont tick *Amblyomma variegatum* 155:187
Hiaasen SO, see Jordan WP, et al
Hiaasen SO, see Lickey ME, et al
Hidaka I, see Kiyohara S, et al
Hilbig R, see Rahmann H
Hildebrand E, Dryl S (1983) Dependence of ciliary reversal in *Paramecium* on extracellular Ca^{2+} concentration 152A:385
Hildebrand JG, see Christensen TA
Hill KG (1983) The physiology of locust auditory receptors. I. Discrete depolarizations of receptor cells 152A:475
Hill KG (1983) The physiology of locust auditory receptors. II. Membrane potentials associated with the response of the receptor cell 152A:483
Hill KG, see Oldfield BP
Hiller-Adams P, Case JF (1984) Optical parameters of euphausiid eyes as a function of habitat depth 154:307
Hillman SS, see Withers PC
Hisada M, see Nagayama T, et al
Hisada M, see Takahata M
Hochstrate P, Hamdorf K (1985) The influence of extracellular calcium on the response of fly photoreceptors 156:53
Hodel B, see Labhart T, et al
Hodgkiss JP (1985) A study of pre- and postganglionic fibres in the intestinal nerve (Remak's nerve) of the chicken 157:383
Höglund G, see Hamdorf K, et al
Holmes RM, Johnstone BM (1984) Gross potentials recorded from the cochlea of the skink *Tiliqua rugosa*. I. Characterization of evoked responses with regard to morphology 154:719
Holmes RM, Johnstone BM (1984) Gross potentials recorded from the cochlea of the skink *Tiliqua rugosa*. II. Increases in metabolic rate and hearing responsiveness during austral spring 154:729
Homberg U (1984) Processing of antennal information in extrinsic mushroom body neurons of the bee brain 154:825
Homberg U, see Milde JJ
Homma K, see Ohta M, et al
Honrubia V, see Lau CGY
Hooper SL, O'Neil MB, Wagner R, Ewer J, Golowasch J, Marder E (1986) The innervation of the pyloric region of the crab, *Cancer borealis*: Homologous muscles in decapod species are differently innervated 159:227
Hopkins CD, see Bass AH
Hopkins CD, see Crawford JD, et al
Horiki H, see Shimada I, et al
Horikoshi T, see Eguchi E
Horn E, Knapp A (1984) On the invariance of visual stimulus efficacy with respect to variable spatial positions. Behavioural investigations with flies (*Calliphora erythrocephala*) 154:555
Horn E, Lang H-G, Rayer B (1986) The development of the static vestibulo-ocular reflex in the Southern Clawed Toad, *Xenopus laevis* I. Intact animals 159:869
Horn E, Mack R, Lang H-G (1986) The development of the static vestibulo-ocular reflex in the Southern Clawed Toad, *Xenopus laevis*, II. Animals with acute vestibular lesions 159:879
Horn E, see Rayer B
Horn E, see Rayer B, et al
Horridge GA, Marcelja L, Jahnke R (1984) Colour vision in butterflies. I. Single colour experiments 155:529
Horwath KL, Duman JG (1983) Preparatory adaptations for winter survival in the cold hardy beetles, *Dendroides canadensis* and *Dendroides concolor* 151B:225
Horwath KL, Duman JG (1983) Induction of antifreeze protein production by juvenile hormone in larvae of the beetle, *Dendroides canadensis* 151B:233
Horwitz J, see Crescitelli F, et al
Horwitz J, see McFall-Ngai M, et al
Houlihan DF, see Sell D
Howard J, Dubs A, Payne R (1984) The dynamics of phototransduction in insects. A comparative study 154:707
Howland HC, see Murphy CJ
Howland HC, see Schaeffel F
Hoy R, see Moiseff A
Hoy RR, see Nolen TG
Huber F, Kleindienst H-U, Weber T, Thorson J (1984) Auditory behavior of the cricket. III. Tracking of male calling song by surgically and developmentally one-eared females, and the curious role of the anterior tympanum 155:725
Huber F, see Oldfield BP, et al
Huber F, see Pollack GS, et al
Huber F, see Schildberger K, et al
Hudson DJ, see Lickey ME, et al
Hudson R, Distel H (1984) Nipple-search pheromone in rabbits: dependence on season and reproductive state 155:13
Hudson R, see Distel H
Hume ID, see Cork SJ
Hume ID, see Cork SJ, et al
Hume ID, see Rübsamen U, et al
Hustert R, see Bräunig P
Hutchings M, Lewis B (1984) The role of two-tone suppression in song coding by ventral cord neurones in the cricket *Teleogryllus oceanicus* (Le Guillou) 154:103

I

Ichikawa M, see Satou M, et al
Illnerová H, Vaněček J (1984) Circadian rhythm in inducibility of rat pineal N-acetyltransferase after brief light pulses at night: control by a morning oscillator 154:739
Ince BW, see Habibi H, et al
Intrator N, see Katzir G
Ishizaki H, see Mizoguchi A
Itoku KA, see Miller GV, et al

J

Jackson FR, Gailey DA, Siegel RW (1983) Biological rhythm mutations affect an experience-dependent modification of male courtship behavior in *Drosophila melanogaster* 151A:545
Jacobs GA, see Weeks JC
Jacobs GH, Neitz J, Crognale M (1985) Spectral sensitivity of ground squirrel cones measured with ERG flicker photometry 156:503

Jahnke R, see Horridge GA, et al
Jegla TC, Ruland C, Kegel G, Keller R (1983) The role of the Y-organ and cephalic gland in ecdysteroid production and the control of molting in the crayfish, *Orconectes limosus* 152B:91
Jellies J, Larimer JL (1985) Synaptic interactions between neurons involved in the production of abdominal posture in crayfish 156:851
Jen PH, Sun X, Kamada T, Zhang S, Shimozawa T (1984) Auditory response properties and spatial response areas of superior collicular neurons of the FM bat, *Eptesicus fuscus* 154:407
Jen PH-S, see McCarty JK
Joermann G (1984) Recognition of spatial parameters by echolocation in the vampire bat, *Desmodus rotundus* 155:67
Johansen J, Kleinhaus AL (1985) A monosynaptic connection between the medial nociceptive and the Nut cell in leech ganglia 156:65
Johansen J, Kleinhaus AL (1985) Properties of action potentials carried by divalent cations in identified leech neurons 157:491
John-Alder HB, Lowe CH, Bennett AF (1983) Thermal dependence of locomotory energetics and aerobic capacity of the Gila monster (*Heloderma suspectum*) 151B:119
Johnson BR, Voigt R, Borroni PF, Atema J (1984) Response properties of lobster chemoreceptors: tuning of primary taste neurons in walking legs 155:593
Johnson CS, Scronce BL, McManus MW (1984) Detection of DC electric dipoles in background fields by the nurse shark 155:681
Johnson SE, Murphey RK (1985) The afferent projection of mesothoracic bristle hairs in the cricket, *Acheta domesticus* 156:369
Johnson SE, see Murphey RK, et al
Johnston IA, see Sidell BD, et al
Johnstone BM, see Holmes RM
Jones KA, Page CH (1986) Postural interneurons in the abdominal nervous system of lobster. I. Organization, morphologies and motor programs for flexion, extension and inhibition 158:259
Jones KA, Page CH (1986) Postural interneurons in the abdominal nervous system of lobster. II. Evidence for neurons having both command and driver roles 158:273
Jones KA, Page CH (1986) Postural interneurons in the abdominal nervous system of lobster. III. Pathways mediating intersegmental spread of excitation 158:281
Jordan WP, Lickey ME, Hiaasen SO (1985) Circadian organization in *Aplysia:* internal desynchronization and amplitude of locomotor rhythm 156:293
Josephson RK, see Mizisin AP
Josephson RK, see Young D
Joshi D, Chandrashekaran MK (1985) Spectral sensitivity of the photoreceptors responsible for phase shifting the circadian rhythm of activity in the bat, *Hipposideros speoris* 156:189
Joy JE, Mrosovsky N (1985) Synchronization of circannual cycles: a cold spring delays the cycles of thirteen-lined ground squirrels 156:125
Jungreis AM, see Cornell JC
Juse A, see Hamdorf K, et al

K

Kahle G, see Meinertzhagen IA, et al
Kalmring K, see Čokl A, et al
Kamada T, see Jen PH, et al
Kamau JMZ, Maloiy GMO (1983) Changes in thyroxine, triiodothyronine and metabolic rate in the dik-dik antelope (*Rhynchotragus kirkii*): effects of temperature and dehydration 152B:23
Kammer AE, see Kinnamon SC
Kämper G (1984) Abdominal ascending interneurons in crickets: responses to sound at the 30-Hz calling-song frequency 155:507
Kanou M, Shimozawa T (1984) A threshold analysis of cricket cercal interneurons by an alternating air-current stimulus 154:357
Kanou M, see Shimozawa T
Karasov WH, Diamond JM (1983) A simple method for measuring intestinal solute uptake in vitro 152B:105
Kasahara Y, see Marui T, et al
Katzir G, Intrator N (1987) Striking of underwater prey by a reef heron, *Egretta gularis schistacea* 160:517
Kaulen P, Erber J, Mobbs P (1984) Current source-density analysis in the mushroom bodies of the honeybee (*Apis mellifera carnica*) 154:569
Kawamura H, see Sato T
Kawasaki M, Aoki K (1983) Visual responses recorded from the optic tectum of Japanese dace, *Tribolodon hakonensis* 152A:147
Keenan L, Koopowitz H (1984) Ionic bases of action potentials in identified flatworm neurones 155:197
Kegel G, see Jegla TC, et al
Keller CH, Zakon HH, Sanchez DY (1986) Evidence for a direct effect of androgens upon electroreceptor tuning 158:301
Keller CH, see Meyer JH , et al
Keller C, see Rose G , et al
Keller R, see Jegla TC, et al
Kelley DB, see Bass AH, et al
Kelley DB, see Gorlick DL, et al
Kelley DB, see Hannigan P
Kelley DB, see Wetzel DM, et al
Kennedy D, see Fricke RA
Kick SA, see Simmons JA, et al
Kihara A, Kuwasawa K (1984) A neuroanatomical and electrophysiological analysis of nervous regulation in the heart of an isopod crustacean, *Bathynomus doederleini* 154:883
Kihara A, Kuwasawa K, Yazawa T (1985) Neural control of the cardio-arterial valves in an isopod crustacean, *Bathynomus doederleini:* Excitatory and inhibitory junctional potentials 157:529
Kinnamon SC, Kammer AE (1983) Neural control of ventilatory movements in the aquatic insect *Corydalus cornutus:* the motor pattern 153A:543
Kirchner WH, see Michelsen A, et al
Kirk MD, Dumont JPC, Wine JJ (1986) Local inhibitor of the crayfish telson-flexor motor giant neurons: morphology and physiology 158:69
Kirschfeld K, Vogt K (1985) The contribution of different colour receptors to a motor output in the fly 157:417
Kirschfeld K, see Minke B
Kirschfeld K, see Zhu H
Kirschvink JL, Walker MM, Chang S-B, Dizon AE, Peterson KA (1985) Chains of single-domain magnetite particles in chinook salmon, *Oncorhynchus tshawytscha* 157:375
Kitoh J, see Kiyohara S, et al
Kiyohara S, Hidaka I, Kitoh J, Yamashita S (1985) Mechanical sensitivity of the facial nerve fibers innervating the anterior palate of the puffer, *Fugu pardalis*, and their central projection to the primary taste center 157:705
Kleindienst H-U, Wohlers DW, Larsen ON (1983) Tympanal membrane motion is necessary for hearing in crickets 151A:397
Kleindienst H-U, see Huber F, et al
Kleindienst HU, see Oldfield BP, et al
Kleindienst H-U, see Schildberger K, et al
Kleinhaus AL, see Johansen J
Klinke R, see Schermuly L
Klinke R, see Smolders JWT
Klis JFL, see Ruigt Gé SF, et al
Klump GM, Windt W, Curio E (1986) The great tit's (*Parus major*) auditory resolution in azimuth 158:383
Knapp A, see Horn E
Knight D, Leggett LMW (1985) Six spectral sensitivity classes in crab visual interneurons 157:235
Knöpfel T, Hess BJM, Precht W (1984) Responses of frog trochlear motoneurons to linear acceleration 154:233
Koch UT, Brunner M (1985) The velocity filter, a system for recording and on line decomposition of complex extracellular spike trains by analog computing 157:823
Koehler WJ, see Steffens H, et al
Kolb G, see Scherer C
Komatsu A (1984) Ascending interneurons that convey a respiratory signal in the central nervous system of the dragonfly larva 154:331
Koopowitz H, see Keenan L
Kooyman GL, Castellini MA, Davis RW, Maue RA (1983) Aerobic diving limits of immature Weddell seals 151B:171
Kössl M, Vater M (1985) The cochlear frequency map of the mustache bat, *Pteronotus parnellii* 157:687
Kostyk SK, see Grobstein P, et al
Kotak VC, Page CH (1986) Tactile stimulation of the swimmeret alters motor programs for abdominal posture in the lobster *Homarus americanus* 158:225
Kovbasa SJ, see Yagodin SV
Kowalski U, see Füller E, et al

Kramer E, see Preiss R
Krenz WD, Reichert H (1985) Lateralized inhibitory input to an identified nonspiking local interneuron in the crayfish mechanosensory system 157:499
Krenz WD, see Reichert H
Kreuzer RO, Sivak JG (1984) Spherical aberration of the fish lens: interspecies variation and age 154:415
Kriebel ME, Gross C, Pappas GD (1987) Two classes of spontaneous miniature excitatory junction potentials and one synaptic vesicle class are present in the ray electrocyte 160:331
Kristan WB Jr, see Stern-Tomlinson W, et al
Kühne R, see Boyd P, et al
Kuiper JW, see Otzen H
Kung C, see Hennessey TM, et al
Kupfermann I, see Lloyd PE, et al
Kurokawa M, Kuwasawa K (1985) Electrophysiological studies on the branchial ganglion in the opisthobranch molluscs (*Aplysia* and *Dolabella*) 156:35
Kurokawa M, Kuwasawa K (1985) Multimodal motor-innervation of the gill of the aplysiid gastropods, *Aplysia kurodai* and *Aplysia juliana* 157:483
Kuster JE, see French AS
Kutsch W, Stevenson P (1984) Manipulation of the endocrine system of *Locusta* and the development of the flight motor pattern 155:129
Kuwasawa K, see Kihara A
Kuwasawa K, see Kihara A, et al
Kuwasawa K, see Kurokawa M
Kuwasawa K, see Yazawa T

L

Labhart T (1986) The electrophysiology of photoreceptors in different eye regions of the desert ant, *Cataglyphis bicolor* 158:1
Labhart T, Hodel B, Valenzuela I (1984) The physiology of the cricket's compound eye with particular reference to the anatomically specialized dorsal rim area 155:289
Ladygina TF, see Popov VV, et al
Lafond J, see Guderley H, et al
Laming PR, Ewert J-P (1984) Visual unit, EEG and sustained potential shift responses to biologically significant stimuli in the brain of toads (*Bufo bufo*) 154:89
Land MF (1984) The resolving power of diurnal superposition eyes measured with an ophthalmoscope 154:515
Land MF (1987) Screening pigment migration in a sphingid moth is triggered by light near the cornea 160:355
Land MF, Eckert H (1985) Maps of the acute zones of fly eyes 156:525
Lang H-G, see Horn E, et al
Langer H, see Schwind R, et al
Lankinen P (1986) Geographical variation in circadian eclosion rhythm and photoperiodic adult diapause in *Drosophila littoralis* 159:123
Larimer JL, see Jellies J
Larimer JL, see Moore D
Larsen ON, see Kleindienst H-U, et al
Latimer W, Lewis DB (1986) Song harmonic content as a parameter determining acoustic orientation behaviour in the cricket *Teleogryllus oceanicus* (Le Guillou) 158:583
Lau CGY, Honrubia V (1987) Fast component threshold for vestibular nystagmus in the rabbit 160:585
Laurent G (1986) Thoracic intersegmental interneurones in the locust with mechanoreceptive inputs from a leg 159:171
Laurent G (1987) Parallel effects of joint receptors on motor neurones and intersegmental interneurones in the locust 160:341
Laverty G (1983) Renal transport of phosphate during phosphate loading in the fresh-water turtle 152B:117
Lawrence BD, see Simmons JA, et al
Lees JG, Hallonquist JD, Mrosovsky N (1983) Differential effects of dark pulses on the two components of split circadian activity rhythms in golden hamsters 153A:123
Leggett LMW, see Knight D
Lehrer M, Wehner R, Srinivasan M (1985) Visual scanning behaviour in honeybees 157:405
Lehrer M, see Srinivasan M
Lehrer M, see Srinivasan MV
Leidescher T, see Schartau W
Lent ChM, Dickinson MH (1984) Serotonin integrates the feeding behavior of the medicinal leech 154:457
Lent ChM, see Dickinson MH
Leong M, see Meyer JH , et al
Leppelsack H-J, see Manley GA, et al
Leucht T (1984) Responses to light under varying magnetic conditions in the honeybee, *Apis mellifica* 154:865
Levine RB, Pak C, Linn D (1985) The structure, function and metamorphic reorganization of somatotopically projecting sensory neurons in *Manduca sexta* larvae 157:1
Lewis B, see Boyd P
Lewis B, see Boyd P, et al
Lewis B, see Hutchings M
Lewis DB, see Latimer W
Lickey ME, Hudson DJ, Hiaasen SO (1983) Circadian organization in *Aplysia*: relations between locomotor rhythm and eye rhythms after cutting both, one or neither optic nerves 153A:133
Lickey ME, see Jordan WP, et al
Lieke E, see Menzel R
Ligman SH, Brownell PH (1985) Differential hormonal action of the bag cell neurons on the arterial system of *Aplysia* 157:31
Ligman S, see Atkins G, et al
Lillywhite HB, Ackerman RA, Palacios L (1983) Cardiorespiratory responses of snakes to experimental hemorrhage 152B:59
Linberg K, see Williams DS, et al
Lindauer M, see Michelsen A, et al
Link A, Marimuthu G, Neuweiler G (1986) Movement as a specific stimulus for prey catching behaviour in rhinolophid and hipposiderid bats 159:403
Linn D, see Levine RB, et al
Linzen B, see Autrum H
Lloyd PE, Kupfermann I, Weiss KR (1985) Two endogenous neuropeptides (SCP_A and SCP_B) produce a cAMP-mediated stimulation of cardiac activity in *Aplysia* 156:659
Lnenicka GA, see Pahapill PA, et al
Loftus R, see Corbière-Tichané G
Loftus R, see Hess E
Loftus R, see Tichy H
Lowe CH, see John-Alder HB, et al
Lychakov DV, see Govardovskiĭ VI
Lynch GR, see Puchalski W

M

Maat A ter, Dijcks FA, Bos NPA (1986) In vivo recordings of neuroendocrine cells (caudo-dorsal cells) in the pond snail 158:853
Macagno ER, see Consi TR
Macdonald JA, Balnave RJ (1984) Miniature end plate currents from teleost extraocular muscle 155:649
Macdonald JA, see Montgomery JC
Machemer H, Machemer-Röhnisch S (1984) Mechanical and electric correlates of mechanoreceptor activation of the ciliated tail in *Paramecium* 154:273
Machemer H, see Deitmer JW, et al
Machemer H, see Machemer-Röhnisch S
Machemer H, see Pape H-C
Machemer-Röhnisch S, Machemer H (1984) Receptor current following controlled stimulation of immobile tail cilia in *Paramecium caudatum* 154:263
Machemer-Röhnisch S, see Machemer H
Mack R, see Horn E, et al
Macmillan CS, Mercer AR (1987) An investigation of the role of dopamine in the antennal lobes of the honeybee, *Apis mellifera* 160:359
Madsen BM, Miller LA (1987) Auditory input to motor neurons of the dorsal longitudinal flight muscles in a noctuid moth (*Barathra brassicae* L.) 160:23
Maes FW (1984) A neural coding model for sensory intensity discrimination, to be applied to gustation 155:263
Maes FW, Erickson RP (1984) Gustatory intensity discrimination in rat NTS: a tool for the evaluation of neural coding theories 155:271
Maes FW, Harms G (1986) Neural coding of salt taste quality in the blowfly *Calliphora vicina*. I. Temporal coding 159:75
Maes FW, Ruifrok ACC (1986) Neural coding of salt taste quality in the blowfly *Calliphora vicina*. II. Ensemble coding 159:89
Male KB, Storey KB (1983) Tissue specific isozymes of glutamate dehydrogenase from the Japanese beetle, *Popillia japonica*: catabolic vs anabolic GDH's 151B:199
Maloiy GMO, see Kamau JMZ
Manley GA, Gleich O, Leppelsack H-J, Oeckinghaus H (1985) Activity patterns of cochlear ganglion neurones in the starling 157:161

Maranto AR, Calabrese RL (1984) Neural control of the hearts in the leech, *Hirudo medicinalis*. I. Anatomy, electrical coupling, and innervation of the hearts 154:367
Maranto AR, Calabrese RL (1984) Neural control of the hearts in the leech, *Hirudo medicinalis*. II. Myogenic activity and its control by heart motor neurons 154:381
Maranto AR, see Calabrese LR
Marcelja L, see Horridge GA, et al
Marder E, see Hooper SL, et al
Marimuthu G, Neuweiler G (1987) The use of acoustical cues for prey detection by the Indian False Vampire Bat, *Megaderma lyra* 160:509
Marimuthu G, see Habersetzer J
Marimuthu G, see Link A, et al
Marquart V, see Römer H
Martin C, see Finger W
Martin GR (1986) The eye of a passeriform bird, the European starling (*Sturnus vulgaris*): eye movement amplitude, visual fields and schematic optics 159:545
Martin GR, see Bowmaker JK
Martin H, Martin U (1987) Transfer of a time-signal isochronus with local time in translocation experiments to the geographical longitude 160:3
Martin U, see Martin H
Martinac B, see Deitmer JW, et al
Marui T, Evans RE, Zielinski B, Hara TJ (1983) Gustatory responses of the rainbow trout (*Salmo gairdneri*) palate to amino acids and derivatives 153A:423
Marui T, Harada S, Kasahara Y (1983) Gustatory specificity for amino acids in the facial taste system of the carp, *Cyprinus carpio* L. 153A:299
Mason JR, see Arzt AH, et al
Matić T (1983) Electrical inhibition in the retina of the butterfly *Papilio*. I. Four spectral types of photoreceptors 152A:169
Matsumoto N, Schwippert WW, Ewert J-P (1986) Intracellular activity of morphologically identified neurons of the grass frog's optic tectum in response to moving configurational visual stimuli 159:721
Matsushima T, see Satou M, et al
Matty AJ, see Habibi H, et al
Maue RA, see Kooyman GL, et al
McCarty JK, Jen PH-S (1983) Bats reject clutter interference for moving targets more successfully than for stationary ones 152A:447
McClellan AD (1983) Higher order neurons in the cerebral ganglia of *Pleurobranchaea* have diverse effects on buccal motor patterns 153A:533
McCormick CA, Popper AN (1984) Auditory sensitivity and psychophysical tuning curves in the elephant nose fish, *Gnathonemus petersii* 155:753
McCrone EJ, Sokolove PG (1986) Photoperiodic activation of brains in castrates and the role of the gonad in reproductive maturation of *Limax maximus* 158:151
McFall-Ngai M, Crescitelli F, Childress J, Horwitz J (1986) Patterns of pigmentation in the eye lens of the deep-sea hatchetfish, *Argyropelecus affinis* Garman 159:791
McFall-Ngai M, see Crescitelli F, et al
McFarland WN, see Hawryshyn CW
McGhee RW, see Stout JF, et al
McIntyre P, see Bryceson KP
McMahon DG, Wallace SF, Block GD (1984) Cellular analysis of the *Bulla* ocular circadian pacemaker system. II. Neurophysiological basis of circadian rhythmicity 155:379
McMahon DG, see Block GD
McMahon DG, see Block GD, et al
McManus MW, see Johnson CS, et al
McVean AR, see Montgomery JC
Megela AL, Capranica RR (1983) A neural and behavioral study of auditory habituation in the bullfrog *Rana catesbeiana* 151A:423
Meguro H, see Shimada I, et al
Meinecke CC, see Necker R
Meinertzhagen IA, Menzel R, Kahle G (1983) The identification of spectral receptor types in the retina and lamina of the dragonfly *Sympetrum rubicundulum* 151A:295
Meinertzhagen IA, see Armett-Kibel C
Meissl H, see Nakamura T, et al
Mellon DeF Jr (1984) Electrical properties and transmitter output associated with growth and transformation in shrimp muscle fibers 155:323
Menaker M, see Cassone VM
Menaker M, see Takahashi JS
Menzel R, Greggers U (1985) Natural phototaxis and its relationship to colour vision in honeybees 157:311
Menzel R, Lieke E (1983) Antagonistic color effects in spatial vision of honeybees 151A:441
Menzel R, Ventura DF, Hertel H, Souza JM de, Greggers U (1986) Spectral sensitivity of photoreceptors in insect compound eyes: Comparison of species and methods 158:165
Menzel R, see Meinertzhagen IA, et al
Menzi U (1987) Visual adaptation in nocturnal and diurnal ants 160:11
Mercer AR, Erber J (1983) The effects of amines on evoked potentials recorded in the mushroom bodies of the bee brain 151A:469
Mercer AR, see Macmillan CS
Metzner W, Radtke-Schuller S (1987) The nuclei of the lateral lemniscus in the rufous horseshoe bat, *Rhinolophus rouxi*. A neurophysiological approach 160:395
Meyer JH (1983) Steroid influences upon the discharge frequencies of a weakly electric fish 153A:29
Meyer JH (1984) Steroid influences upon discharge frequencies of intact and isolated pacemakers of weakly electric fish 154:659
Meyer JH, Bell CC (1983) Sensory gating by a corollary discharge mechanism 151A:401
Meyer JH, Leong M, Keller CH (1987) Hormone-induced and maturational changes in electric organ discharges and electroreceptor tuning in the weakly electric fish *Apteronotus* 160:385
Meyer JH, Zakon HH, Heiligenberg W (1984) Steroid influences upon the electrosensory system of weakly electric fish: direct effects upon discharge frequencies with indirect effects upon electroreceptor tuning 154:625
Meyer JH, see Zakon HH
Meyrand P, Moulins M (1986) Myogenic oscillatory activity in the pyloric rhythmic motor system of Crustacea 158:489
Michelsen A, Kirchner WH, Andersen BB, Lindauer M (1986) The tooting and quacking vibration signals of honeybee queens: a quantitative analysis 158:605
Midtgård U, Arad Z, Skadhauge E (1983) The *rete ophtalmicum* and the relation of its size to the body-to-brain temperature difference in the fowl (*Gallus domesticus*) 153B:241
Milde JJ (1984) Ocellar interneurons in the honeybee. Structure and signals of L-neurons 154:683
Milde JJ, Homberg U (1984) Ocellar interneurons in the honeybee. Characteristics of spiking L-neurons 155:151
Milde JJ, Seyan HS, Strausfeld NJ (1987) The neck motor system of the fly *Calliphora erythrocephala*. II. Sensory organization 160:225
Milde JJ, see Strausfeld NJ , et al
Miller GV, Itoku KA, Fleischer AB, Stark WS (1984) Studies of fluorescence in *Drosophila* compound eyes: changes induced by intense light and vitamin A deprivation 154:297
Miller LA, see Madsen BM
Miller LA, see Surlykke A
Milstead ML, see Carr WES, et al
Minke B (1983) The *trp* is a *Drosophila* mutant sensitive to developmental temperature 151A:483
Minke B, Kirschfeld K (1984) Non-local interactions between light induced processes in *Calliphora* photoreceptors 154:175
Minke B, Stephenson RS (1985) The characteristics of chemically induced noise in *Musca* photoreceptors 156:339
Miyan JA, see Neil DM, et al
Miyatani M, see Tazaki K, et al
Mizisin AP, Josephson RK (1987) Mechanical power output of locust flight muscle 160:413
Mizoguchi A, Ishizaki H (1984) Circadian clock controlling gut-purge rhythm of the saturniid *Samia cynthia ricini*: its characterization and entrainment mechanism 155:639
Mobbs P, see Kaulen P, et al
Moed PJ, see Nuboer JFW
Moeng RS, Popper AN (1984) Auditory response of saccular neurons of the catfish, *Ictalurus punctatus* 155:615
Moerland TS, see Sidell BD, et al
Moffat AJM, see Ehret G
Møhl B, see Troest N
Möhl B (1985) The role of proprioception in locust flight control. I. Asymmetry and

coupling within the time pattern of motor units 156:93
Möhl B (1985) The role of proprioception in locust flight control. II. Information signalled by forewing stretch receptors during flight 156:103
Möhl B (1985) The role of proprioception in locust flight control. III. The influence of afferent stimulation of the stretch receptor nerve 156:281
Moiseff A, Hoy R (1983) Sensitivity to ultrasound in an identified auditory interneuron in the cricket: a possible neural link to phonotactic behavior 152A:155
Molen JN van der, Nederstigt LJA, Veenman CL (1985) Variability in blowfly taste responses 157:211
Montgomery JC (1984) Noise cancellation in the electrosensory system of the thornback ray; common mode rejection of input produced by the animal's own ventilatory movement 155:103
Montgomery JC, Macdonald JA (1984) Performance of motor systems in Antarctic fishes 154:241
Montgomery JC, McVean AR (1987) Brain function in antarctic fish: Activity of central vestibular neurons in relation to head rotation and eye movement 160:289
Montgomery JC, see Paulin MG
Moore D, Larimer JL (1987) Neural control of a cyclic postural behavior in the crayfish, *Procambarus clarkii*: the pattern-initiating interneurons 160:169
Moore MC (1986) Elevated testosterone levels during nonbreeding-season territoriality in a fall-breeding lizard, *Sceloporus jarrovi* 158:159
Moore MC, Schwabl H, Farner DS (1983) Biochronometry of testicular regression in white-crowned sparrows (*Zonotrichia leucophrys gambelii*) 153A:489
Mordue W, see Morgan PJ
Morgan PJ, Mordue W (1983) Electrochemical gradients across *Locusta* Malpighian tubules 151B:175
Morita Y, see Tamotsu S
Moroney MK, Pettigrew JD (1987) Some observations on the visual optics of kingfishers (Aves, Coraciformes, Alcedinidae) 160:137
Morton DB, Truman JW (1985) Steroid regulation of the peptide-mediated increase in cyclic GMP in the nervous system of the hawkmoth, *Manduca sexta* 157:423
Moss AG, Tamm SL (1986) Electrophysiological control of ciliary motor responses in the ctenophore *Pleurobrachia* 158:311
Moss CF, Simmons AM (1986) Frequency selectivity of hearing in the green treefrog, *Hyla cinerea* 159:257
Motte I de la, see Burkhardt D
Moulins M, see Meyrand P
Moulins M, see Rezer E
Moulins M, see Robertson RM
Mrosovsky N, Hallonquist JD (1986) Colliding of activity onset and offset: evidence for multiple circadian oscillators 159:187
Mrosovsky N, see Joy JE
Mrosovsky N, see Lees JG, et al
Mudry KM, Capranica RR (1987) Correlation between auditory evoked responses in the thalamus and species-specific call characteristics. I. *Rana catesbeiana* (Anura: Ranidae) 160:477
Müller SC, Scheich H (1985) Functional organization of the avian auditory field L. A comparative 2DG study 156:1
Mulloney B, see Paul DH
Münz H (1985) Single unit activity in the peripheral lateral line system of the cichlid fish *Sarotherodon niloticus* L. 157:555
Münz H, Claas B, Fritzsch B (1984) Electroreceptive and mechanoreceptive units in the lateral line of the axolotl *Ambystoma mexicanum* 154:33
Münz H, see Zittlau KE, et al
Murphey RK (1985) A second cricket cercal sensory system: bristle hairs and the interneurons they activate 156:357
Murphey RK, Bacon JP, Johnson SE (1985) Ectopic neurons and the organization of insect sensory systems 156:381
Murphey RK, see Johnson SE
Murphy CJ, Howland HC (1983) Owl eyes: Accommodation, corneal curvature and refractive state 151A:277
Muske LE, Fernald RD (1987) Control of a teleost social signal. I. Neural basis for differential expression of a color pattern 160:89
Muske LE, Fernald RD (1987) Control of a teleost social signal. II. Anatomical and physiological specializations of chromatophores 160:99
Mustaparta H, Tømmeraas BÅ, Baeckström P, Bakke JM, Ohloff G (1984) Ipsdienol-specific receptor cells in bark beetles: structure-activity relationships of various analogues and of deuterium-labelled ipsdienol 154:591

N

Nagayama T, Takahata M, Hisada M (1983) Local spikeless interaction of motoneuron dendrites in the crayfish *Procambarus clarkii* Girard 152A:335
Nagayama T, Takahata M, Hisada M (1984) Functional characteristics of local nonspiking interneurons as the pre-motor elements in crayfish 154:499
Nakamura T, Thiele G, Meissl H (1986) Intracellular responses from the photosensitive pineal organ of the teleost, *Phoxinus phoxinus* 159:325
Nalbach G, see Nalbach H-O
Nalbach G, see Zeil J, et al
Nalbach H-O, Nalbach G (1987) Distribution of optokinetic sensitivity over the eye of crabs: its relation to habitat and possible role in flow-field analysis 160:127
Nalbach H-O, see Zeil J, et al
Narins PM, see Zelick R
Narins PM, see Zelick RD
Necker R (1985) Observations on the function of a slowly-adapting mechanoreceptor associated with filoplumes in the feathered skin of pigeons 156:391
Necker R, Meinecke CC (1984) Conduction velocities and fiber diameters in a cutaneous nerve of the pigeon 154:817
Nederstigt LJA, see Molen JN van der, et al
Neil DM, Priest TD, Miyan JA, Wotherspoon RM, Schöne H (1984) Co-ordinated equilibrium responses at two joints in the spiny lobster antenna in relation to the pattern of movements imposed upon the legs 155:351
Neitz J, see Jacobs GH, et al
Neumeyer C (1986) Wavelength discrimination in the goldfish 158:203
Neuweiler G, Heiligenberg W (1987) H. Autrum: On the occasion of his 80th birthday 160:1
Neuweiler G, Singh S, Sripathi K (1984) Audiograms of a South Indian bat community 154:133
Neuweiler G, see Habersetzer J, et al
Neuweiler G, see Link A, et al
Neuweiler G, see Marimuthu G
Neuweiler G, see Vogler B
Newcomb RW (1983) Peptides in the sinus gland of *Cardisoma carnifex*: isolation and amino acid analysis 153B:207
Nikinmaa M (1983) Adrenergic regulation of haemoglobin oxygen affinity in rainbow trout red cells 152B:67
Nissanov J, see Eaton RC, et al
Niwa H, see Taniguchi I, et al
Nohr D, see Semm P, et al
Nolen TG, Hoy RR (1986) Phonotaxis in flying crickets. I. Attraction to the calling song and avoidance of bat-like ultrasound are discrete behaviors 159:423
Nolen TG, Hoy RR (1986) Phonotaxis in flying crickets. II. Physiological mechanisms of two-tone suppression of the high frequency avoidance steering behavior by the calling song 159:441
Northmore DPM (1984) Visual and saccadic activity in the goldfish torus longitudinalis 155:333
Nuboer JFW, Moed PJ (1983) Increment-threshold spectral sensitivity in the rabbit 151A:353
Nuboer JFW, Nuys WM van, Steenbergen JC van (1983) Colour changes in a light regimen as synchronizers of circadian activity 151A:359
Nuboer JFW, Nuys WM van, Wortel JF (1983) Cone systems in the rabbit retina revealed by ERG-null-detection 151A:347
Nuboer JFW, see Wortel JF, et al
Nusbaum MP, see Stern-Tomlinson W, et al
Nuys WM van, see Nuboer JFW, et al

O

O'Connell RJ (1985) Responses to pheromone blends in insect olfactory receptor neurons 156:747

Oeckinghaus H (1985) Modulation of activity in starling cochlear ganglion units by middle-ear muscle contractions, perilymph movements and lagena stimuli 157:643
Oeckinghaus H, see Manley GA, et al
Ohloff G, see Mustaparta H, et al
Ohrui H, see Shimada I, et al
Ohta M, Wada M, Homma K (1984) Induction of rapid testicular growth in Japanese quail by phasic electrical stimulation of the hypothalamic photosensitive area 154:583
Olberg RM (1983) Pheromone-triggered flip-flopping interneurons in the ventral nerve cord of the silkworm moth, *Bombyx mori* 152A:297
Olberg RM (1986) Identified target-selective visual interneurons descending from the dragonfly brain 159:827
Oldfield BP (1983) Central projections of primary auditory fibres in Tettigoniidae (Orthoptera: Ensifera) 151A:389
Oldfield BP (1984) Physiology of auditory receptors in two species of Tettigoniidae (Orthoptera: Ensifera). Alternative tonotopic organisations of the auditory organ 155:689
Oldfield BP, Hill KG (1983) The physiology of ascending auditory interneurons in the tettigoniid *Caedicia simplex* (Orthoptera: Ensifera): response properties and a model of integration in the afferent auditory pathway 152A:495
Oldfield BP, Hill KG (1986) Functional organization of insect auditory sensilla 158:27
Oldfield BP, Kleindienst HU, Huber F (1986) Physiology and tonotopic organization of auditory receptors in the cricket *Gryllus bimaculatus* DeGeer 159:457
O'Neil MB, see Hooper SL, et al
O'Neill WE (1985) Responses to pure tones and linear FM components of the CF – FM biosonar signal by single units in the inferior colliculus of the mustached bat 157:797
Orchard I, see Finlayson LH, et al
Oshima I, see Ebihara S, et al
Osorio D (1986) Directionally selective cells in the locust medulla 159:841
Ostwald J (1984) Tonotopical organization and pure tone response characteristics of single units in the auditory cortex of the Greater Horseshoe Bat 155:821
Otto C, see Čokl A, et al
Otzen H, Kuiper JW (1983) The effect of air velocity on the wingstroke frequency of the blowfly *Calliphora erythrocephala* 153A:289

P

Page CH, see Jones KA
Page CH, see Kotak VC
Page TL (1983) Regeneration of the optic tracts and circadian pacemaker activity in the cockroach *Leucophaea maderae* 152A:231
Page TL (1983) Effects of optic-tract regeneration on internal coupling in the circadian system of the cockroach 153A:353
Pahapill PA, Lnenicka GA, Atwood HL (1985) Asymmetry of motor impulses and neuromuscular synapses produced in crayfish claws by unilateral immobilization 157:461
Pak C, see Levine RB, et al
Palacios L, see Lillywhite HB, et al
Pape H-C, Machemer H (1986) Electrical properties and membrane currents in the ciliate *Didinium* 158:111
Pappas GD, see Kriebel ME , et al
Pardi L, Scapini F (1983) Inheritance of solar direction finding in sandhoppers: mass-crossing experiments 151A:435
Pardi L, see Scapini F, et al
Passmore NI, Capranica RR, Telford SR, Bishop PJ (1984) Phonotaxis in the painted reed frog (*Hyperolius marmoratus*). The localization of elevated sound sources 154:189
Patterson JA, Silver SC (1983) Afferent and efferent components of *Octopus* retina 151A:381
Paul DH, Mulloney B (1985) Local interneurons in the swimmeret system of the crayfish 156:489
Paul DH, Mulloney B (1986) Intersegmental coordination of swimmeret rhythms in isolated nerve cords of crayfish 158:215
Paul R, Steiner A, Gemperlein R (1986) Spectral sensitivity of *Calliphora erythrocephala* and other insect species studied with Fourier Interferometric Stimulation (FIS) 158:669
Paul R, see Steiner A , et al
Paulin MG, Montgomery JC (1986) Elasmobranch eye motor dynamic characterised using pseudorandom stimulus 158:723
Paulsen R (1984) Spectral characteristics of isolated blowfly rhabdoms 155:47
Paulsen R, Bentrop J (1984) Reversible phosphorylation of opsin induced by irradiation of blowfly retinae 155:39
Paulsen R, see Schwemer J, et al
Payne R, see Howard J, et al
Pearson KG, Gynther IC, Heitler WJ (1986) Coupling of flight initiation to the jump in locusts 158:81
Pearson KG, Wolf H (1987) Comparison of motor patterns in the intact and deafferented flight system of the locust. I. Electromyographic analysis 160:259
Pearson KG, see Hedwig B
Pearson KG, see Wolf H
Pedersen SB, see Skovmand O
Penn JS, see Hamilton PV, et al
Pepe IM, see Schwemer J, et al
Perez LE, see Stern-Tomlinson W, et al
Pérez M, Coro F (1984) Physiological characteristics of the tympanic organ in noctuoid moths. I. Responses to brief acoustic pulses 154:441
Pérez M, Coro F (1985) Physiological characteristics of the tympanic organ in noctuoid moths. II. Responses to 45 ms and 5 s acoustic stimuli 156:689
Pérez M, Coro F (1986) Physiological characteristics of the tympanic organ in noctuoid moths. III. Post-stimulus phenomena 159:115
Pérez M, see Coro F
Peterson EL (1984) The fast conducting system of the leech: a network of 93 dye-coupled interneurons 154:781
Peterson EL (1984) Two stages of integration in a leech visual interneuron 155:543
Peterson EL (1985) Visual interneurons in the leech brain. I. Lateral visual cells in the subesophageal ganglion 156:697
Peterson EL (1985) Visual interneurons in the leech brain. II. The anterior visual cells of the supraesophageal ganglion 156:707
Peterson EL (1985) Visual interneurons in the leech brain. III. The unpaired H cell 156:719
Peterson KA, see Kirschvink JL, et al
Pettigrew JD, see Calford MB, et al
Pettigrew JD, see Moroney MK
Peyraud C, see Thomas S, et al
Pflüger H-J, Burrows M (1987) A strand receptor with a central cell body synapses upon spiking local interneurones in the locust 160:295
Phillips JB (1986) Magnetic compass orientation in the Eastern red-spotted newt (*Notophthalmus viridescens*) 158:103
Phillips JB, see Adler K
Phillips JE, see Chamberlin ME
Pickard GE, Turek FW (1985) Effects of partial destruction of the suprachiasmatic nuclei on two circadian parameters: wheel-running activity and short-day induced testicular regression 156:803
Pierce SK, see Costa CJ
Pietsch G, Schuller G (1987) Auditory self-stimulation by vocalization in the CF-FM bat, *Rhinolophus rouxi* 160:635
Plummer MR, Tautz J, Wine JJ (1986) Frequency coding of waterborne vibrations by abdominal mechanosensory interneurons in the crayfish, *Procambarus clarkii* 158:751
Plummer MR, see Reichert H, et al
Pollack AJ, see Ritzmann RE
Pollack GS (1986) Discrimination of calling song models by the cricket, *Teleogryllus oceanicus*: the influence of sound direction on neural encoding of the stimulus temporal pattern and on phonotactic behavior 158:549
Pollack GS, Huber F, Weber T (1984) Frequency and temporal pattern-dependent phonotaxis of crickets (*Teleogryllus oceanicus*) during tethered flight and compensated walking 154:13
Pollack GS, see Doolan JM
Pollack GS, see Yetman S
Pollak GD, see Bodenhamer RD
Popov AV, see Rozhkova GI, et al
Popov VV, Ladygina TF, Supin AYa (1986) Evoked potentials of the auditory cortex of the porpoise, *Phocoena phocoena* 158:705
Popper AN, see McCormick CA
Popper AN, see Moeng RS
Porter RM, see Frixione E
Poussin C, Schlegel P (1984) Directional sensitivity of auditory neurons in the superior

colliculus of the bat, *Eptesicus fuscus*, using free field sound stimulation 154:253
Precht W, see Dieringer N
Precht W, see Dieringer N, et al
Precht W, see Knöpfel T, et al
Preiss R, Kramer E (1984) The interaction of edge-fixation and negative phototaxis in the orientation of walking gypsy moths, *Lymantria dispar* 154:493
Preston DG, see Bodznick D
Preston RR, Van Houten JL (1987) Chemoreception in *Paramecium tetraurelia*: acetate and folate-induced membrane hyperpolarization 160:525
Preston RR, Van Houten JL (1987) Localization of the chemoreceptive properties of the surface membrane of *Paramecium tetraurelia* 160:537
Priest TD, see Neil DM, et al
Prior DJ, see Grega DS
Puchalski W, Lynch GR (1986) Evidence for differences in the circadian organization of hamsters exposed to short day photoperiod 159:7
Putters FA, see Assem J van den, et al

Q

Quinlan MC, Hadley NF (1983) Water relations of the terrestrial isopods *Procellio laevis* and *Porcellionides pruinosus* (Crustacea, Oniscoidea) 151B:155
Quinn WG, see Tully T

R

Radtke-Schuller S, see Metzner W
Rahmann H, Hilbig R (1983) Phylogenetical aspects of brain gangliosides in vertebrates 151B:215
Rahmann H, see Zimmermann E
Rathmayer W, Bevengut M (1986) The common inhibitory neuron innervates every leg muscle in crabs 158:665
Rathmayer W, Erxleben C (1983) Identified muscle fibers in a crab. I. Characteristics of excitatory and inhibitory neuromuscular transmission 152A:411
Rathmayer W, see Wiens TJ
Rayer B, Cagol E, Horn E (1983) Compensation of vestibular-induced deficits in relation to the development of the Southern Clawed toad, *Xenopus laevis* Daudin. A behavioral study 151A:487
Rayer B, Horn E (1986) The development of the static vestibulo-ocular reflex in the Southern Clawed Toad, *Xenopus laevis* III. Chronic hemilabyrinthectomized tadpoles 159:887
Rayer B, see Horn E, et al
Rehnberg BG, Schreck CB (1986) The olfactory L-serine receptor in coho salmon: biochemical specificity and behavioral response 159:61
Reichert H, Krenz WD (1986) In vivo visualization of individual neurons in arthropod ganglia facilitates intracellular neuropil recording 158:625
Reichert H, Plummer MR, Wine JJ (1983) Identified nonspiking local interneurons mediate nonrecurrent lateral inhibition of crayfish mechanosensory interneurons 151A:261
Reichert H, Wine JJ (1983) Coordination of lateral giant and non-giant systems in crayfish escape behavior 153A:3
Reichert H, see Krenz WD
Reichert H, see Rowell CHF
Reinertsen RE, Haftorn S (1983) Nocturnal hypothermia and metabolism in the Willow Tit *Parus montanus* at 63° N 151B:109
Remé C, Aeberhard B, Schoch M (1985) Circadian rhythm of autophagy and light responses of autophagy and disk-shedding in the rat retina 156:669
Renaud JM, Stevens ED (1983) A comparison between field habits and contractile performance of frog and toad sartorius muscle 151B:127
Renninger GH (1983) Synchronization of impulse generation by lateral inhibition in the *Limulus* compound eye. Intracellular studies 152A:517
Reyes A, see Grobstein P, et al
Rezer E, Moulins M (1983) Expression of the crustacean pyloric pattern generator in the intact animal 153A:17
Rheinlaender J, Römer H (1986) Insect hearing in the field. I. The use of identified nerve cells as 'biological microphones' 158:647
Rheinlaender J, see Römer H
Richardson GS, see Welsh DK, et al
Rick R, see Coles JA
Ritzmann RE, Pollack AJ (1986) Identification of thoracic interneurons that mediate giant interneuron-to-motor pathways in the cockroach 159:639
Ritzmann RE, see Tobias ML
Roberts A, Clarke JDW (1983) The sensory systems of embryos of the newt: *Triturus vulgaris* 152A:529
Roberts A, see Soffe SR, et al
Robertson RM (1987) Interneurons in the flight system of the cricket *Teleogryllus oceanicus* 160:431
Robertson RM, Moulins M (1984) Oscillatory command input to the motor pattern generators of the Crustacean stomatogastric ganglion. II. The gastric rhythm 154:473
Robinson GE (1987) Modulation of alarm pheromone perception in the honey bee: evidence for division of labor based on hormonally regulated response thresholds 160:613
Rodda GH (1984) The orientation and navigation of juvenile alligators: evidence of magnetic sensitivity 154:649
Rodionova HI, see Rozhkova GI, et al
Römer H, Bailey WJ (1986) Insect hearing in the field. II. Male spacing behaviour and correlated acoustic cues in the bushcricket *Mygalopsis marki* 159:627
Römer H, Marquart V (1984) Morphology and physiology of auditory interneurons in the metathoracic ganglion of the locust 155:249
Römer H, Rheinlaender J (1983) Electrical stimulation of the tympanal nerve as a tool for analysing the responses of auditory interneurons in the locust 152A:289
Römer H, Seikowski U (1985) Responses to model songs of auditory neurons in the thoracic ganglia and brain of the locust 156:845
Römer H, see Rheinlaender J
Römer H, see Ronacher B
Ronacher B, Helversen D von, Helversen O von (1986) Routes and stations in the processing of auditory directional information in the CNS of a grasshopper, as revealed by surgical experiments 158:363
Ronacher B, Römer H (1985) Spike synchronization of tympanic receptor fibres in a grasshopper (*Chorthippus biguttulus* L., Acrididae). A possible mechanism for detection of short gaps in model songs 157:631
Ronan MC, Bodznick D (1986) End buds: non-ampullary electroreceptors in adult lampreys 158:9
Rose GJ, Brenowitz EA, Capranica RR (1985) Species specificity and temperature dependency of temporal processing by the auditory midbrain of two species of treefrogs 157:763
Rose GJ, Capranica RR (1984) Processing amplitude-modulated sounds by the auditory midbrain of two species of toads: matched temporal filters 154:211
Rose G, Heiligenberg W (1986) Neural coding of difference frequencies in the midbrain of the electric fish *Eigenmannia*: Reading the sense of rotation in an amplitude-phase plane 158:613
Rose G, Heiligenberg W (1986) Limits of phase and amplitude sensitivity in the torus semicircularis of *Eigenmannia* 159:813
Rose G, Keller C, Heiligenberg W (1987) 'Ancestral' neural mechanisms of electrolocation suggest a substrate for the evolution of the jamming avoidance response 160:491
Rose G, see Heiligenberg W
Rossel S, Wehner R (1984) How bees analyse the polarization patterns in the sky. Experiments and model 154:607
Rossel S, Wehner R (1984) Celestial orientation in bees: the use of spectral cues 155:605
Roth A, see Baumann M
Rovainen CM (1985) Respiratory bursts at the midline of the rostral medulla of the lamprey 157:303
Rovainen CM, Yan Q (1985) Sensory responses of dorsal cells in the lamprey brain 156:181
Roverud RC, Grinnell AD (1985) Discrimination performance and echolocation signal integration requirements for target detection and distance determination in the CF/FM bat, *Noctilio albiventris* 156:447
Roverud RC, Grinnell AD (1985) Echoloca-

tion sound features processed to provide distance information in the CF/FM bat, *Noctilio albiventris:* evidence for a gated time window utilizing both CF and FM components 156:457
Roverud RC, Grinnell AD (1985) Frequency tracking and Doppler shift compensation in response to an artificial CF/FM echolocation sound in the CF/FM bat, *Noctilio albiventris* 156:471
Rowell CHF, Reichert H (1986) Three descending interneurons reporting deviation from course in the locust. II. Physiology 158:775
Rowell CHF, see Griss C
Rozhkova GI, Rodionova HI, Popov AV (1984) Two types of information processing in cercal systems of insects: directional sensitivity of giant interneurons 154:805
Rübsamen K, see Rübsamen U, et al
Rübsamen R, Betz M (1986) Control of echolocation pulses by neurons of the nucleus ambiguus in the rufous horseshoe bat, *Rhinolophus rouxi.* I. Single unit recordings in the ventral motor nucleus of the laryngeal nerves in spontaneously vocalizing bats 159:675
Rübsamen R, Dörrscheidt GJ (1986) Tonotopic organization of the auditory forebrain in a songbird, the European starling 158:639
Rübsamen R, Schweizer H (1986) Control of echolocation pulses by neurons of the nucleus ambiguus in the rufous horseshoe bat, *Rhinolophus rouxi.* II. Afferent and efferent connections of the motor nucleus of the laryngeal nerves 159:689
Rübsamen U, Hume ID, Rübsamen K (1983) Effect of ambient temperature on autonomic thermoregulation and activity patterns in the rufous rat-kangaroo (*Aepyprymnus rufescens:* Marsupialia) 153B:175
Rugenbrink H, see Wortel JF , et al
Ruifrok ACC, see Maes FW
Ruigt Gé SF, Klis JFL, Bercken J van den (1986) Pronounced repetitive activity induced by the pyrethroid insecticide, fenfluthrin, in the slowly adapting stretch receptor neuron of the crayfish 159:43
Ruland C, see Jegla TC, et al
Russell DF (1986) Respiratory pattern generation in adult lampreys (*Lampetra fluviatilis*): interneurons and burst resetting 158:91

S

Sabra R, Glantz RM (1985) Polarization sensitivity of crayfish photoreceptors is correlated with their termination sites in the lamina ganglionaris 156:315
Saigusa M (1986) The circa-tidal rhythm of larval release in the incubating crab *Sesarma* 159:21
Saimi Y, see Hennessey TM, et al
Sanchez DY, see Keller CH, et al
Sandeman DC (1985) Crayfish antennae as tactile organs: their mobility and the responses of their proprioceptors to displacement 157:363
Sandeman D, see Zeil J, et al
Sandeman R, see Zeil J, et al
Sass H (1983) Production, release and effectiveness of two female sex pheromone components of *Periplaneta americana* 152A:309
Sato T, Kawamura H (1984) Effects of bilateral suprachiasmatic nucleus lesions on the circadian rhythms in a diurnal rodent, the Siberian chipmunk (*Eutamias sibiricus*) 155:745
Satou M, Ewert J-P (1985) The antidromic activation of tectal neurons by electrical stimuli applied to the caudal medulla oblongata in the toad, *Bufo bufo* L. 157:739
Satou M, Fujita I, Ichikawa M, Yamaguchi K, Ueda K (1983) Field potential and intracellular potential studies of the olfactory bulb in the carp: evidence for a functional separation of the olfactory bulb into lateral and medial subdivisions 152A:319
Satou M, Matsushima T, Takeuchi H, Ueda K (1985) Tongue-muscle-controlling motoneurons in the Japanese toad: topography, morphology and neuronal pathways from the 'snapping-evoking area' in the optic tectum 157:717
Saunders DS (1984) Photoperiodic time measurement in *Sarcophaga argyrostoma:* An attempt to use daily temperature cycles to distinguish external from internal coincidence 154:789
Saunders J, Bastian J (1984) The physiology and morphology of two types of electrosensory neurons in the weakly electric fish *Apteronotus leptorhynchus* 154:199
Scapini F, Buiatti M (1985) Inheritance of solar direction finding in sandhoppers. III. Progeny tests 157:433
Scapini F, Ugolini A, Pardi L (1985) Inheritance of solar direction finding in sandhoppers. II. Differences in arcuated coastlines 156:729
Scapini F, see Pardi L
Schaeffel F, Howland HC (1987) Corneal accommodation in chick and pigeon 160:375
Schäfer HJ, Schmidt U (1985) Ontogenetic development of neural responses in the olfactory bulb of laboratory mice 157:789
Schall U, Delius JD (1986) Sensory inputs to the nucleus basalis prosencephali, a feeding-pecking centre in the pigeon 159:33
Scharstein H, see Schmitz B, et al
Scharstein H, see Wendler G
Schartau W, Leidescher T (1983) Composition of the hemolymph of the tarantula *Eurypelma californicum* 152B:73
Scheich H, see Müller SC
Scherer C, Kolb G (1987) Behavioral experiments on the visual processing of color stimuli in *Pieris brassicae* L. (Lepidoptera) 160:645
Schermuly L, Klinke R (1985) Change of characteristic frequency of pigeon primary auditory afferents with temperature 156:209
Schild D, Zippel HP (1986) The influence of repeated natural stimulation upon discharge patterns of mitral cells of the goldfish olfactory bulb 158:563
Schildberger K (1984) Multimodal interneurons in the cricket brain: properties of identified extrinsic mushroom body cells 154:71
Schildberger K (1984) Temporal selectivity of identified auditory neurons in the cricket brain 155:171
Schildberger K, Wohlers DW, Schmitz B, Kleindienst H-U, Huber F (1986) Morphological and physiological changes in central auditory neurons following unilateral foreleg amputation in larval crickets 158:291
Schlecht P, see Schwind R, et al
Schlegel P, see Poussin C
Schmidt RS (1984) Neural correlates of frog calling: preoptic area trigger of 'mating calling' 154:847
Schmidt RS (1985) Prostaglandin-induced mating call phonotaxis in female American toad: facilitation by progesterone and arginine vasotocin 156:823
Schmidt U, see Schäfer HJ
Schmiedel-Jakob I, see Hatt H
Schmitz B (1985) Phonotaxis in *Gryllus campestris* L. (Orthoptera, Gryllidae). III. Intensity dependence of the behavioural performance and relative importance of tympana and spiracles in directional hearing 156:165
Schmitz B, Scharstein H, Wendler G (1983) Phonotaxis in *Gryllus campestris* L. (Orthoptera, Gryllidae). II. Acoustic orientation of female crickets after occlusion of single sound entrances 152A:257
Schmitz B, see Schildberger K, et al
Schneider D, see Boppré M
Schnitzler H-U, Flieger E (1983) Detection of oscillating target movements by echolocation in the Greater Horseshoe bat 153A:385
Schnitzler H-U, Hackbarth H, Heilmann U, Herbert H (1985) Echolocation behavior of rufous horseshoe bats hunting for insects in the flycatcher-style 157:39
Schnitzler H-U, see Emde G von der
Schoch M, see Remé C, et al
Schomburg ED, see Steffens H, et al
Schöne H, see Dunham DW
Schöne H, see Neil DM, et al
Schreck CB, see Rehnberg BG
Schuller G (1984) Natural ultrasonic echoes from wing beating insects are encoded by collicular neurons in the CF-FM bat, *Rhinolophus ferrumequinum* 155:121
Schuller G (1986) Influence of echolocation pulse rate on Doppler shift compensation control system in the greater horseshoe bat 158:239
Schuller G, see Habersetzer J, et al
Schuller G, see Henson OW Jr, et al
Schuller G, see Pietsch G
Schulz S, Denaro M, Xypolyta-Bulloch A, Van Houten J (1984) Relationship of folate binding to chemoreception in *Paramecium* 155:113

Schwabl H, see Moore MC, et al
Schweitzer J (1983) The physiological and anatomical localization of two electroreceptive diencephalic nuclei in the thornback ray, *Platyrhinoidis triseriata* 153 A: 331
Schweitzer J (1986) Functional organization of the electroreceptive midbrain in an elasmobranch (*Platyrhinoidis triseriata*). A single-unit study 158: 43
Schweizer H, see Rübsamen R
Schwemer J (1984) Renewal of visual pigment in photoreceptors of the blowfly 154: 535
Schwemer J, Pepe IM, Paulsen R, Cugnoli C (1984) Light-induced *trans-cis* isomerization of retinal by a protein from honeybee retina 154: 549
Schwenne T, Zarnack W (1987) Movements of the hindwings of *Locusta migratoria*, measured with miniature coils 160: 657
Schwind R (1984) Evidence for true polarization vision based on a two-channel analyzer system in the eye of the water bug, *Notonecta glauca* 154: 53
Schwind R (1984) The plunge reaction of the backswimmer *Notonecta glauca* 155: 319
Schwind R, Schlecht P, Langer H (1984) Microspectrophotometric characterization and localization of three visual pigments in the compound eye of *Notonecta glauca* L. (Heteroptera) 154: 341
Schwippert WW, see Matsumoto N, et al
Scronce BL, see Johnson CS, et al
Seelinger G (1983) Response characteristics and specificity of chemoreceptors in *Hemilepistus reaumuri* (Crustacea, Isopoda) 152 A: 219
Segel S, see Dudai Y, et al
Segil N, see Bass AH, et al
Seikowski U, see Römer H
Seiler B, see Elepfandt A, et al
Seitz G, see Weyrauther E
Sell D, Houlihan DF (1983) Oxygen consumption of locust and cockroach recta in vitro during fluid absorption 153 B: 223
Selverston AI, see Claiborne BJ
Semm P, Demaine C (1986) Neurophysiological properties of magnetic cells in the pigeon's visual system 159: 619
Semm P, Nohr D, Demaine C, Wiltschko W (1984) Neural basis of the magnetic compass: interactions of visual, magnetic and vestibular inputs in the pigeon's brain 155: 283
Semm P, Vollrath L (1984) Electrical responses of homing pigeon and guinea pig Purkinje cells to pineal indoleamines applied by microelectrophoresis 154: 675
Semm P, see Zeise ML
Seyan HS, see Milde JJ , et al
Seyan HS, see Strausfeld NJ , et al
Shen J-X (1983) A behavioral study of vibrational sensitivity in the pigeon (*Columba livia*) 152 A: 251
Shen J-X (1983) The cercus-to-giant interneuron system in the bushcricket *Tettigonia cantans*: morphology and response to low-frequency sound 151 A: 449
Shimada I, Horiki H, Ohrui H, Meguro H (1985) Taste response to 2,5-anhydro-D-hexitols; rigid stereospecificity of the furanose site in the sugar receptor of the flesh fly 157: 477
Shimozawa T, Kanou M (1984) Varieties of filiform hairs: range fractionation by sensory afferents and cercal interneurons of a cricket 155: 485
Shimozawa T, Kanou M (1984) The aerodynamics and sensory physiology of range fractionation in the cercal filiform sensilla of the cricket *Gryllus bimaculatus* 155: 495
Shimozawa T, see Jen PH, et al
Shimozawa T, see Kanou M
Sidell BD, Johnston IA, Moerland TS, Goldspink G (1983) The eurythermal myofibrillar protein complex of the mummichog (*Fundulus heteroclitus*): adaptation to a fluctuating thermal environment 153 B: 167
Siegel RW, see Jackson FR, et al
Silver S, see Boyd P, et al
Silver SC, see Patterson JA
Silver WL, Finger TE (1984) Electrophysiological examination of a non-olfactory, non-gustatory chemosense in the searobin, *Prionotus carolinus* 154: 167
Silver WL, see Arzt AH, et al
Simmons AM, see Moss CF
Simmons JA, Kick SA, Lawrence BD, Hale C, Bard C, Escudié B (1983) Acuity of horizontal angle discrimination by the echolocating bat, *Eptesicus fuscus* 153 A: 321
Simmons JA, Kick SA, Lawrence BD (1984) Echolocation and hearing in the mousetailed bat, *Rhinopoma hardwickei:* acoustic evolution of echolocation in bats 154: 347
Simmons PJ (1986) Interactions made by large second-order neurones of the median ocellus of the locust 159: 97
Simon E, see Gray DA
Singh S, see Neuweiler G, et al
Sippel M, Breckow J (1984) Non-monotonic response-intensity characteristics of auditory receptor cells in *Locusta migratoria* 155: 633
Sippel M, see Breckow J
Sivak JG, see Kreuzer RO
Skadhauge E, see Dawson TJ, et al
Skadhauge E, see Midtgård U, et al
Skopik SD, see Takeda M
Skovmand O, Pedersen SB (1983) Song recognition and song pattern in a shorthorned grasshopper 153 A: 393
Slesinger P, Bell CC (1985) Primary afferent fibers conduct impulses in both directions under physiological stimulus conditions 157: 15
Smakman JGJ, Hateren JH van, Stavenga DG (1984) Angular sensitivity of blowfly photoreceptors: intracellular measurements and wave-optical predictions 155: 239
Smakman JGJ, Stavenga DG (1987) Angular sensitivity of blowfly photoreceptors: broadening by artificial electrical coupling 160: 501
Smith BA, see Collett TS, et al
Smith KB, see Getz WM
Smith KB, see Getz WM, et al
Smolders JWT, Klinke R (1984) Effects of temperature on the properties of primary auditory fibres of the spectacled caiman, *Caiman crocodilus* (L.) 155: 19
Soffe SR, Clarke JDW, Roberts A (1983) Swimming and other centrally generated motor patterns in newt embryos 152 A: 535
Sokolove PG, see McCrone EJ
Somlyo AP, see Walz B
Sorensen PW, Hara TJ, Stacey NE (1987) Extreme olfactory sensitivity of mature and gonadally-regressed goldfish to a potent steroidal pheromone, 17α,20β-dihydroxy-4-pregnen-3-one 160: 305
Souza JM de, see Menzel R, et al
Spangler HG (1986) Functional and temporal analysis of sound production in *Galleria mellonella* L. (Lepidoptera: Pyralidae) 159: 751
Speck-Hergenröder J, Barth FG (1987) Tuning of vibration sensitive neurons in the central nervous system of a wandering spider, *Cupiennius salei* Keys. 160: 467
Spencer AN, see Arkett SA
Spencer M (1986) The innervation and chemical sensitivity of single aesthetasc hairs 158: 59
Spray DC, see Susswein AJ, et al
Srinivasan MV, Lehrer M (1984) Temporal acuity of honeybee vision: behavioural studies using moving stimuli 155: 297
Srinivasan M, Lehrer M (1985) Temporal resolution of colour vision in the honeybee 157: 579
Srinivasan M, see Lehrer M, et al
Sripathi K, see Neuweiler G, et al
Stacey NE, see Sorensen PW , et al
Stark WS, see Miller GV, et al
Stavenga DG, see Smakman JGJ
Stavenga DG, see Smakman JGJ, et al
Stavenga DG, see Tinbergen J
Steenbergen JC van, see Nuboer JFW, et al
Steffens H, Schomburg ED, Koehler WJ (1985) Spinal reflex pattern in the tortoise (*Testudo graeca, T. hermanni*) 156: 153
Steiner A, Paul R, Gemperlein R (1987) Retinal receptor types in *Aglais urticae* and *Pieris brassicae* (Lepidoptera), revealed by analysis of the electroretinogram obtained with Fourier interferometric stimulation (FIS) 160: 247
Steiner A, see Paul R, et al
Steinlechner S, Buchberger A, Heldmaier G (1987) Circadian rhythms of pineal N-acetyltransferase activity in the Djungarian hamster, *Phodopus sungorus*, in response to seasonal changes of natural photoperiod 160: 593
Stephens GC, see Davis JP
Stephens PJ, Atwood HL (1983) Conversion of synaptic performance in crab motor axons by temperature changes 153 A: 455
Stephens RE, see Stommel EW
Stephenson RS, see Minke B
Stern-Tomlinson W, Nusbaum MP, Perez LE, Kristan WB Jr (1986) A kinematic study of crawling behavior in the leech, *Hirudo medicinalis* 158: 593

Stevens ED, see Renaud JM
Stevenson P, see Kutsch W
Stommel EW, Stephens RE (1985) Calcium-dependent phosphatidylinositol phosphorylation in lamellibranch gill lateral cilia 157:441
Stommel EW, Stephens RE (1985) Cyclic AMP and calcium in the differential control of *Mytilus* gill cilia 157:451
Stommel EW (1984) Calcium regenerative potentials in *Mytilus edulis* gill abfrontal ciliated epithelial cells 155:445
Stommel EW (1984) Calcium activation of mussel gill abfrontal cilia 155:457
Storey KB, see Male KB
Stout JF, DeHaan CH, McGhee RW (1983) Attractiveness of the male *Acheta domesticus* calling song to females. I. Dependence on each of the calling song features 153A:509
Stout JF, see Atkins G, et al
Stowe S (1983) Light-induced and spontaneous breakdown of the rhabdoms in a crab at dawn; depolarisation versus calcium levels 153A:365
Stowe S (1983) A theroretical explanation of intensity-independent variation of polarisation sensitivity in Crustacean retinula cells 153A:435
Strausfeld NJ, Seyan HS, Milde JJ (1987) The neck motor system of the fly *Calliphora erythrocephala*. I. Muscles and motor neurons 160:205
Strausfeld NJ, see Bacon JP
Strausfeld NJ, see Milde JJ , et al
Strumwasser F, see Woolum JC
Stuenkel EL (1983) Biosynthesis and axonal transport of proteins and identified peptide hormones in the X-organ sinus gland neurosecretory system 153B:191
Suga N, see Taniguchi I, et al
Suilmann M, see Cruse H, et al
Sun X, see Jen PH, et al
Supin AYa, see Popov VV, et al
Surlykke A, Gogala M (1986) Stridulation and hearing in the noctuid moth *Thecophora fovea* (Tr.) 159:267
Surlykke A, Miller LA (1985) The influence of arctiid moth clicks on bat echolocation; jamming or warning? 156:831
Susswein AJ, Achituv Y, Cappell MS, Spray DC, Bennett MVL (1984) Pharyngeal movements during feeding sequences in *Navanax inermis:* a cinematographic analysis 155:209
Suthers RA, Hector DH (1985) The physiology of vocalization by the echolocating oilbird, *Steatornis caripensis* 156:243
Suthers RA, see Wenstrup JJ
Suzuki R, see Tatsumi H, et al
Sweeney BM, see Walz B, et al

T

Takahashi JS, Menaker M (1984) Multiple redundant circadian oscillators within the isolated avian pineal gland 154:435
Takahashi K, see Chinzei Y, et al
Takahata M, Hisada M (1985) Interactions between the motor systems controlling uropod steering and abdominal posture in crayfish 157:547
Takahata M, see Nagayama T, et al
Takeda M, Skopik SD (1985) Geographic variation in the circadian system controlling photoperiodism in *Ostrinia nubilalis* 156:653
Takeuchi H, see Satou M, et al
Tamm SL, see Moss AG
Tamotsu S, Morita Y (1986) Photoreception in pineal organs of larval and adult lampreys, *Lampetra japonica* 159:1
Taniguchi I (1985) Echolocation sounds and hearing of the greater Japanese horseshoe bat (*Rhinolophus ferrumequinum nippon*) 156:185
Taniguchi I, Niwa H, Wong D, Suga N (1986) Response properties of FM–FM combination-sensitive neurons in the auditory cortex of the mustached bat 159:331
Tateda H, see Umeda K
Tatsumi H, Haragashira M, Suzuki R (1985) Interrelations between posture and locomotion in response to body rotation in crayfish 157:509
Tattersall JEH, Brace RC (1987) Physiology and motor innervation of the supralateral radular retractor muscles of the pulmonate snail, *Planorbarius corneus* 160:115
Tautz J, see Aicher B
Tautz J, see Bender M, et al
Tautz J, see Plummer MR, et al
Tazaki K, Cooke IM (1983) Topographical localization of function in the cardiac ganglion of the crab, *Portunus sanguinolentus* 151A:311
Tazaki K, Cooke IM (1983) Separation of neuronal sites of driver potential and impulse generation by ligaturing in the cardiac ganglion of the lobster, *Homarus americanus* 151A:329
Tazaki K, Miyatani M, Ando F (1986) The anatomy and physiology of the stomatogastric nervous system of *Squilla*. I. The posterior cardiac plate and the pyloric systems 159:521
Telford SR, see Passmore NI, et al
Teyke T (1985) Collision with and avoidance of obstacles by blind cave fish *Anoptichthys jordani* (Characidae) 157:837
Theophilidis G (1984) Propagation failure of action potentials at the bifurcation point of the slow axon innervating the extensor tibiae muscle of *Decticus albifrons* (Orthoptera) 154:431
Thiele G, see Nakamura T, et al
Thomas S (1983) Changes in blood acid-base balance in trout (*Salmo gairdneri* Richardson) following exposure to combined hypoxia and hypercapnia 152B:53
Thomas S, Fievet B, Barthelemy L, Peyraud C (1983) Comparison of the effects of exogenous and endogenous hypercapnia on ventilation and oxygen uptake in the rainbow trout (*Salmo gairdneri* R.) 151B:185
Thompson HW, see Carr WES
Thompson KJ (1985) Organization of inputs to motoneurons during fictive respiration in the isolated lamprey brain 157:291
Thorson J, see Huber F, et al
Thüring DA (1986) Variability of motor output during flight steering in locusts 158:653
Tichy H (1987) Hygroreceptor identification and response characteristics in the stick insect *Carausius morosus* 160:43
Tichy H, Loftus R (1983) Relative excitability of antennal olfactory receptors in the stick insect, *Carausius morosus* L.: in search of a simple, concentration-independent odor-coding parameter 152A:459
Tichy H, Loftus R (1987) Response characteristics of a cold receptor in the stick insect *Carausius morosus* 160:33
Tinbergen J, Stavenga DG (1987) Spectral sensitivity of light induced respiratory activity of photoreceptor mitochondria in the intact fly 160:195
Tømmerås BÅ (1985) Specialization of the olfactory receptor cells in the bark beetle *Ips typographus* and its predator *Thanasimus formicarius* to bark beetle pheromones and host tree volatiles 157:335
Tømmerås BÅ, see Mustaparta H, et al
Tobias ML, Ritzmann RE (1984) Responses of mesothoracic motor neurons to giant interneuron stimulation in the cockroach 154:633
Tobias ML, Ritzmann RE (1984) Effect of metathoracic leg ablation upon mesothoracic motor responses to giant interneuron stimulation in the cockroach 154:641
Tobin TR, Bell WJ (1986) Chemo-orientation of male *Trogoderma variabile* (Coleoptera, Dermestidae) in a simulated corridor of female sex pheromone 158:729
Tobler I, Borbély AA (1985) Effect of rest deprivation on motor activity of fish 157:817
Troest N, Møhl B (1986) The detection of phantom targets in noise by serotine bats; negative evidence for the coherent receiver 159:559
Truman JW (1984) The preparatory behavior rhythm of the moth *Manduca sexta:* an ecdysteroid-triggered circadian rhythm that is independent of the brain 155:521
Truman JW, see Copenhaver PF
Truman JW, see Morton DB
Truman JW, see Weeks JC
Tully T, Quinn WG (1985) Classical conditioning and retention in normal and mutant *Drosophila melanogaster* 157:263
Turek FW, see Pickard GE

U

Uchiyama K, see Ebihara S, et al
Ueda K, see Satou M, et al
Ugolini A, see Scapini F, et al
Umeda K, Tateda H (1985) Visual interneurons in the lobula complex of the fleshfly, *Boettcherisca peregrina* 157:831

Underwood H (1983) Circadian organization in the lizard *Anolis carolinensis*: a multioscillator system 152A:265
Underwood H (1985) Pineal melatonin rhythms in the lizard *Anolis carolinensis*: effects of light and temperature cycles 157:57

V

Valentinčič T (1985) Behavioral study of chemoreception in the sea star *Marthasterias glacialis*: Structure-activity relationships of lactic acid, amino acids, and acetylcholine 157:537
Valenzuela I, see Labhart T, et al
Valli P, Zucca G, Botta L, Casella C (1984) Specificity of the K-channels in labyrinthine organs: effects of Rb^+ and Cs^+ on the conversion process in frog semicircular canals 155:739
Van Houten JL, see Preston RR
Van Houten J, see Schulz S, et al
Vaněček J, see Illnerová H
Vanegas H, see Williams B, et al
Vargo EL, Fletcher DJC (1986) Evidence of pheromonal queen control over the production of male and female sexuals in the fire ant, *Solenopsis invicta* 159:741
Varjú D (1987) The interaction between visual edge fixation and skototaxis in the mealworm beetle *Tenebrio molitor* 160:543
Vater M, Feng AS, Betz M (1985) An HRP-study of the frequency-place map of the horseshoe bat cochlea: Morphological correlates of the sharp tuning to a narrow frequency band 157:671
Vater M, see Henson OW Jr, et al
Vater M, see Kössl M
Vaz Nunes M, see Veerman A
Veenman CL, see Molen JN van der, et al
Veerman A, Vaz Nunes M (1987) Analysis of the operation of the photoperiodic counter provides evidence for hourglass time measurement in the spider mite *Tetranychus urticae* 160:421
Ventura DF, see Menzel R, et al
Vogler B, Neuweiler G (1983) Echolocation in the noctule (*Nyctalus noctula*) and horseshoe bat (*Rhinolophus ferrumequinum*) 152A:421
Vogler B, see Habersetzer J
Vogt K, see Kirschfeld K
Voigt R, see Johnson BR, et al
Vollrath F (1986) Gravity as an orientation guide during web-construction in the orb spider *Ara-neus diadematus* (Araneae, Araneidae) 159:275
Vollrath L, see Semm P
Voort-Vinkestijn M-J van der, see Assem J van den, et al

W

Wada M (1986) Circadian rhythms of testosterone-dependent behaviors, crowing and locomotor activity, in male Japanese quail 158:17
Wada M, see Ohta M, et al
Wagner H-J, see Douglas RH, et al
Wagner R, see Hooper SL, et al
Waldman B (1985) Olfactory basis of kin recognition in toad tadpoles 156:565
Waldrop B, Glantz RM (1985) Nonspiking local interneurons mediate surround inhibition of crayfish sustaining fibers 156:763
Waldrop B, see Glantz RM, et al
Walker MM (1984) Learned magnetic field discrimination in yellowfin tuna, *Thunnus albacares* 155:673
Walker MM, Bitterman ME (1985) Conditioned responding to magnetic fields by honeybees 157:67
Walker MM, see Kirschvink JL, et al
Walkowiak W (1984) Neuronal correlates of the recognition of pulsed sound signals in the grass frog 155:57
Wallace SF, see Block GD, et al
Wallace SF, see McMahon DG, et al
Wallraff HG (1986) Directional components derived from initial-orientation data of inexperienced homing pigeons 159:143
Wallraff HG, Benvenuti S, Foà A (1984) Pigeon navigation: Time course of olfactory signal processing and dependence on access to fresh environmental air 155:139
Wallraff HG, see Benvenuti S
Walters ET, Erickson MT (1986) Directional control and the functional organization of defensive responses in *Aplysia* 159:339
Walz A, see Walz B, et al
Walz B (1985) Light-induced changes of extra- and intracellular potassium concentration in photoreceptors of the leech, *Hirudo medicinalis* 157:199
Walz B, Somlyo AP (1984) Quantitative electron probe microanalysis of leech photoreceptors 154:81
Walz B, Walz A, Sweeney BM (1983) A circadian rhythm in RNA in the dinoflagellate, *Gonyaulax polyedra* 151B:207
Wang-Bennett LT, Glantz RM (1985) Presynaptic inhibition in the crayfish brain. II. Morphology and ultrastructure of the terminal arborization 156:605
Wang-Bennett LT, see Glantz RM, et al
Warner ACI, see Cork SJ
Watts RE, French AS (1985) Sensory transduction in dorsal cutaneous mechanoreceptors of the frog, *Rana pipiens* 157:657
Weber T, see Huber F, et al
Weber T, see Pollack GS, et al
Weeks JC, Jacobs GA (1987) A reflex behavior mediated by monosynaptic connections between hair afferents and motoneurons in the larval tobacco hornworm, *Manduca sexta* 160:315
Weeks JC, Truman JW (1984) Neural organization of peptide-activated ecdysis behaviors during the metamorphosis of *Manduca sexta*. I. Conservation of the peristalsis motor pattern at the larval-pupal transformation 155:407
Weeks JC, Truman JW (1984) Neural organization of peptide-activated ecdysis behaviors during the metamorphosis of *Manduca sexta*. II. Retention of the proleg motor pattern despite loss of the prolegs at pupation 155:423
Wehner R, see Cheng K, et al
Wehner R, see Lehrer M, et al
Wehner R, see Rossel S
Weiler R, see Ammermüller J
Weiler R, see Datum K-H, et al
Weiss KR, see Lloyd PE, et al
Wells MJ, see Chase R
Welsh DK, Engel EMRA, Richardson GS, Dement WC (1986) Precision of circadian wake and activity onset timing in the mouse 158:827
Welsh DK, Engel EMRA, Richardson GS, Dement WC (1986) Precision of circadian wake and activity onset timing in the mouse (Erratum) 159:577
Wendler G, Scharstein H (1986) The orientation of grain weevils (*Sitophilus granarius*): Influence of spontaneous turning tendencies and of gravitational stimuli 159:377
Wendler G, see Schmitz B, et al
Wenning A (1983) A sensory neuron associated with the nephridia of the leech *Hirudo medicinalis* L. 152A:455
Wenstrup JJ (1984) Auditory sensitivity in the fish-catching bat, *Noctilio leporinus* 155:91
Wenstrup JJ, Suthers RA (1984) Echolocation of moving targets by the fish-catching bat, *Noctilio leporinus* 155:75
Wetzel DM, Haerter UL, Kelley DB (1985) A proposed neural pathway for vocalization in South African clawed frogs, *Xenopus laevis* 157:749
Weyrauther E (1986) Do retinula cells trigger the screening pigment migration in the eye of the moth *Ephestia kuehniella*? 159:55
Weyrauther E, Seitz G (1985) Mobility and electric charge of screening pigment granules in the superposition eye of *Ephestia kuehniella* Z. 157:667
White RH, Banister MJ, Bennett RR (1983) Spectral sensitivity of screening pigment migration in the compound eye of *Manduca sexta* 153A:59
Wiedemer L, see Elepfandt A
Wieland CM, see Eaton RC, et al
Wiens TJ, Rathmayer W (1985) The distribution of the common inhibitory neuron in brachyuran limb musculature. I. Target muscles 156:305
Wilczynski W, Zakon HH, Brenowitz EA (1984) Acoustic communication in spring peepers. Call characteristics and neurophysiological aspects 155:577
Wilczynski W, see Brenowitz EA, et al
Williams B, Hernández N, Vanegas H (1983) Electrophysiological analysis of the teleostean nucleus isthmi and its relationships with the optic tectum 152A:545
Williams DS, Wilson C, Linberg K, Fisher S (1984) Effects of low sodium, ouabain, and strophanthidin on the shedding of rod outer segment discs 155:763
Williams JC Jr, Hagedorn HH, Beyenbach KW (1983) Dynamic changes in flow rate and composition of urine during the post-

bloodmeal diuresis in *Aedes aegypti* (L.) 153 B:257
Williamson R (1986) Efferent activity in the *Octopus* statocyst nerves 158:125
Williamson R, Budelmann BU (1985) The response of the *Octopus* angular acceleration receptor system to sinusoidal stimulation 156:403
Wilson C, see Williams DS, et al
Wiltschko R, Wiltschko W (1985) Pigeon homing: Does initial orientation include a 'preferred compass direction'? 157:469
Wiltschko R, see Füller E, et al
Wiltschko W, see Semm P, et al
Wiltschko W, see Wiltschko R
Windt W, see Klump GM, et al
Wine JJ, see Kirk MD, et al
Wine JJ, see Plummer MR, et al
Wine JJ, see Reichert H
Wine JJ, see Reichert H, et al
Wise LZ, see Calford MB, et al
Withers PC, Hillman SS (1983) The effects of hypoxia on pulmonary function and maximal rates of oxygen consumption in two anuran amphibians 152 B:125
Wohlers DW, see Kleindienst H-U, et al
Wohlers DW, see Schildberger K, et al
Wolf H (1986) Response patterns of two auditory interneurons in a freely moving grasshopper (*Chorthippus biguttulus* L.). I. Response properties in the intact animal 158:689
Wolf H (1986) Response patterns of two auditory interneurons in a freely moving grasshopper (*Chorthippus biguttulus* L.). II. Representation of stimulus parameters relevant in behavior 158:697
Wolf H, Helversen O von (1986) 'Switching-off' of an auditory interneuron during stridulation in the acridid grasshopper *Chorthippus biguttulus* L. 158:861
Wolf H, Pearson KG (1987) Comparison of motor patterns in the intact and deafferented flight system of the locust. II. Intracellular recordings from flight motoneurons 160:269
Wolf H, see Pearson KG
Wong D, see Taniguchi I, et al
Woolum JC, Strumwasser F (1983) Is the period of the circadian oscillator in the eye of *Aplysia* directly homeostatically regulated? 151 A:253
Wortel JF, Rugenbrink H, Nuboer JFW (1987) The photopic spectral sensitivity of the dorsal and ventral retinae of the chicken 160:151
Wortel JF, see Nuboer JFW, et al
Wotherspoon RM, see Neil DM, et al

X

Xypolyta-Bulloch A, see Schulz S, et al

Y

Yacoe ME (1983) Maintenance of the pectoralis muscle during hibernation in the big brown bat, *Eptesicus fuscus* 152 B:97
Yacoe ME (1983) Protein metabolism in the pectoralis muscle and liver of hibernating bats, *Eptesicus fuscus* 152 B:137
Yagodin SV, Kovbasa SJ (1984) The flight maintenance mechanism in the cockroach *Periplaneta americana* L. 155:697
Yamaguchi K, see Satou M, et al
Yamashita S, see Kiyohara S, et al
Yan Q, see Rovainen CM
Yazawa T, Kuwasawa K (1984) The cardioregulator nerves of the hermit crabs: anatomical and electrophysiological identification of their distribution inside the heart 154:871
Yazawa T, Kuwasawa K (1984) The cardioregulator nerves of hermit crabs: multimodal activation of the heart by the accelerator axons 155:313
Yazawa T, see Kihara A, et al
Yetman S, Pollack GS (1987) Proboscis extension in the blowfly: directional responses to stimulation of identified chemosensitive hairs 160:367
Young D, Josephson RK (1983) Mechanisms of sound-production and muscle contraction kinetics in cicadas 152 A:183
Young D, Josephson RK (1983) Pure-tone songs in cicadas with special reference to the genus *Magicicada* 152 A:197
Yuthas J, see Bastian J

Z

Zakon HH, Meyer JH (1983) Plasticity of electroreceptor tuning in the weakly electric fish, *Sternopygus dariensis* 153 A:477
Zakon HH, see Brenowitz EA, et al
Zakon HH, see Keller CH, et al
Zakon HH, see Meyer JM, et al
Zakon HH, see Wilczynski W, et al
Zanker JM, Collett TS (1985) The optomotor system on the ground: on the absence of visual control of speed in walking ladybirds 156:395
Zarnack W, see Schwenne T
Zeil J, Nalbach G, Nalbach H-O (1986) Eyes, eye stalks and the visual world of semi-terrestrial crabs 159:801
Zeil J, Sandeman R, Sandeman D (1985) Tactile localisation: the function of active antennal movements in the crayfish *Cherax destructor* 157:607
Zeise ML, Semm P (1985) Melatonin lowers excitability of guinea pig hippocampal neurons in vitro 157:23
Zelick RD, Narins PM (1983) Intensity discrimination and the precision of call timing in two species of neotropical treefrogs 153 A:403
Zelick R, Narins PM (1985) Characterization of the advertisement call oscillator in the frog *Eleutherodactylus coqui* 156:223
Zettler F, see Ammermüller J
Zettler F, see Datum K-H, et al
Zhang S, see Jen PH, et al
Zhu H, Kirschfeld K (1984) Protection against photodestruction in fly photoreceptors by carotenoid pigments 154:153
Zielinski B, see Getchell ML , et al
Zielinski B, see Marui T, et al 153 A:423
Zimmermann E, Rahmann H (1987) Acoustic communication in the poison-arrow frog *Phyllobates tricolor*: advertisement calls and their effects on behavior and metabolic brain activity of recipients 160:693
Zippel HP, see Schild D
Zittlau KE, Claas B, Münz H (1986) Directional sensitivity of lateral line units in the clawed toad *Xenopus laevis* Daudin 158:469
Zucca G, see Valli P, et al
Zvi S, see Dudai Y, et al
Zwaan A de, Bont AMT de, Hemelraad J (1983) The role of phosphoenolpyruvate carboxykinase in the anaerobic metabolism of the sea mussel *Mytilus edulis* L. 153 B:267
Zwanziger L, see Grobstein P, et al

J Comp Physiol A (1987) 160:721–757

Journal of Comparative Physiology A Sensory, Neural, and Behavioral Physiology
© Springer-Verlag 1987

Subject Index to Volumes 151–160 (1983–1987)

Up to and including Volume 153, parts A and B appeared together as one journal with parts A and B appearing alternately. Since Volume 154, the two parts have been published as two separate journals. Therefore, A and B were inserted after the volume number in Vols. 151–153. From Volume 154 onwards the author and subject index refers exclusively to the *Journal of Comparative Physiology A: Sensory, Neural and Behavioral Physiology*.

A

Aberration, spherical, of fish lens 154:415 (Kreuzer RO, Sivak JG)
Acanthurus, intestinal glucose transport 152B:79 (Ferraris RP, Ahearn GA)
Acari, photoperiodic counter in *Tetranychus* 160:421 (Veerman A, Vaz Nunes M)
Accipitridae, sound coding in auditory midbrain 157:149 (Calford MB et al.)
Accommodation, corneal, in birds 160:375 (Schaeffel F, Howland HC)
– in owl eyes 151A:277 (Murphy CJ, Howland HC)
–, role in anuran depth vision 158:133 (Douglas RH et al.)
Acetate-induced membrane hyperpolarization in *Paramecium* 160:525 (Preston RR, Van Houten JL)
Acetylcholine, response of sea star to – 157:537 (Valentinčič T)
Acheta, a second cercal sensory system 156:357 (Murphey RK)
–, dependence of phonotaxis on calling song features 153A:409 (Stout JF et al.)
–, ectopic neurons 156:381 (Murphey RK et al.)
–, multimodal interneurons in brain 154:71 (Schildberger K)
–, phonotaxis after killing of acoustic interneurons 154:795 (Atkins G et al.)
–, thoracic afferent projection of bristle hairs 156:369 (Johnson SE, Murphey RK)
Acid-base balance in trout blood 152B:53 (Thomas S)
Acipenser, muscle pyruvate kinase 153B:247 (Guderley H et al.)
Acoustic communication, effects of calls on behavior and brain activity in frogs 160:693 (Zimmermann E, Rahmann H)
– – in electric fish 159:297 (Crawford JD et al.)
– – in spring peepers 155:577 (Wilczynski W et al.), 585 (Brenowitz EA et al.)
– cues and male spacing behavior in bushcrickets 159:627 (Römer H, Bailey WJ)
– relationships between moths and bat 155:795 (Fullard JH)
Acoustical cues in bat prey detection 160:509 (Marimuthu G, Neuweiler G)
Acrophylla, working model of velocity filter 157:823 (Koch UT, Brunner M)
Action potential, temperature effects on encoding in cockroach mechanoreceptor 156:817 (French AS)
– potentials, carried by divalent cations, in leech neurons 157:491 (Johansen J, Kleinhaus AL)
– –, epithelial, in a tunicate 156:117 (Bone Q)
– –, in flatworm neurones 155:197 (Keenan L, Koopowitz H)
– –, propagation failure in orthopteran motor axon 154:431 (Theophilidis G)
Adaptation in cockroach tactile spine action potentials 155:803 (French AS)
–, effect on SER changes in crayfish retinula cells 159:667 (Frixione E, Porter RM)
–, visual, in nocturnal and diurnal ants 160:11 (Menzi U)
Adenosine 5′-monophosphate (AMP), chemoattractant for a marine shrimp 153A:47 (Carr WES, Thompson HW)
Adenylate cyclase, defective, in a fly memory mutant 155:569 (Dudai Y et al.)
Adrenergic regulation of salamander olfactory glands 155:435 (Getchell ML, Getchell TV)
– – of trout blood oxygen affinity 152B:67 (Nikinmaa M)
Aedes, post-bloodmeal diuresis 153B:257 (Williams JC et al.)
Aepyprymnus, thermoregulation 153B:175 (Rübsamen U et al.)
Aerobic capacity of the Gila Monster 151B:119 (John-Alder HB et al.)
Aeshna, target-selective visual interneurons 159:827 (Olberg RM)
Agkistrodon, infrared tectal thresholds 151A:461 (Cock Buning T de)
Aglais, spectral sensitivity 160:247 (Steiner A et al.)
Agnatha, see Cyclostomata
Air vortex rings as cricket communication signals 160:79 (Heinzel H-G, Dambach M)
Air velocity, effect on fly wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
Alligator, orientation and navigation of juveniles 154:649 (Rodda GH)
Alpheus, properties of muscle fibers 155:323 (Mellon DeF Jr)
Ambloplites, spherical aberration of lens 154:415 (Kreuzer RO, Sivak JG)
Amblyomma, tarsal warm and cold receptors 155:187 (Hess E, Loftus R)
Ambystoma, β-adrenergic regulation of olfactory glands 155:435 (Getchell ML, Getchell TV)
–, electro- and mechanoreceptive units in lateral line 154:33 (Münz H et al.)
–, odorant stimulation of olfactory mucosa 160:155 (Getchell ML et al.)
–, olfaction 158:479 (Arzt AH et al.)
Amiloride, effect on hamster taste responses 160:281 (Herness MS)
Amine modulation of extension command element-evoked motor activity 156:875 (Harris-Warrick RM)
Amines, effects on evoked-potentials in bee brain 151A:469 (Mercer AR, Erber J)
Amino acid deficient diets, food-aversion learning in slugs 159:281 (Delaney K, Gelperin A)
– – receptors, effect of temperature on crayfish – 152A:405 (Hatt H)
–, acids, gustatory responses of trout palate to – 153A:423 (Marui T et al.)
– –, response of sea star to – 157:537 (Valentinčič T)
– –, specificity of carp facial taste system 153A:299 (Marui T et al.)
– –, net flux in *Tetrahymena* 152B:27 (Davis JP, Stephens GC)
– –, structure and stimulation of crayfish leg receptors 155:219 (Hatt H)
AMP, cyclic, in control of lamellibranch gill cilia 157:451 (Stommel EW, Stephens RE)
–, see also adenosine 5′-monophosphate
Amphibia, accommodiation and depth vision in anurans 158:133 (Douglas RH et al.)
–, acoustic communication in *Hyla* hybrids 154:319 (Doherty JA, Gerhardt HC)

Amphibia, acoustic communication in *Hyla* 155:577 (Wilczynski W et al.), 585 (Brenowitz EA et al.)
–, – communication in *Phyllobates* 160:693 (Zimmermann E, Rahmann H)
–, activity of tectal neurons in *Salamandra* 153A:85 (Finkenstädt T, Ewert J-P)
–, adrenergic regulation of olfactory glands in *Ambystoma* 155:435 (Getchell ML, Getchell TV)
–, androgen-induced calls in *Xenopus* females 158:517 (Hannigan P, Kelley DB)
–, auditory habituation in *Rana* 151A:423 (Megela AL, Capranica RR)
–, – thalamic responses in *Rana* 160:477 (Mudry KM, Capranica RR)
–, binocularly driven neurons in *Rana* optic tectum 157:47 (Gaillard F)
–, brain responses to biologically significant stimuli in *Bufo* 154:89 (Laming PR, Ewert J-P)
–, call oscillator in *Eleutherodactylus* 156:223 (Zelick R, Narins PM)
–, coding of pulsed sound signals in *Rana* 155:57 (Walkowiak W)
–, contractile performance of anuran sartorius muscle 151B:127 (Renaud JM, Stevens ED)
–, development of static vestibulo-ocular reflex in *Xenopus* 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
–, directional sensitivity of *Xenopus* lateral line 158:469 (Zittlau KE et al.)
–, electro- and mechanoreceptive units in *Ambystoma* lateral line 154:33 (Münz H et al.)
–, extraocular reflex organization in *Rana* 158:179 (Dieringer N, Precht W)
–, frequency selectivity of hearing in *Hyla* 159:257 (Moss CF, Simmons AM)
–, gaze stabilization in *Rana* 153A:495 (Dieringer N et al.)
–, hormone induced phonotaxis in *Bufo* 156:823 (Schmidt RS)
–, identified tectal neurons in *Rana* 159:721 (Matsumoto N et al.)
–, intensity discrimination and call timing in *Eleutherodactylus* 153A:403 (Zelick RD, Narins PM)
–, K-channels in *Rana* labyrinthine organ 155:739 (Valli P et al.)
–, kin recognition in *Bufo* tadpoles 156:565 (Waldman B)
–, lateral-line responses in *Xenopus* 160:667 (Elepfandt A, Wiedemer L)
–, magnetic compass orientation in *Notophthalmus* 158:103 (Phillips JB)
–, mapping of brain activity in *Bufo* 156:433 (Finkenstädt T et al.)
–, motion perception in *Bufo* 152A:241 (Burghagen H, Ewert J-P)
–, motor patterns in *Triturus* embryos 152A:535 (Soffe SR et al.)
–, neural correlates for *Rana* calling 154:847 (Schmidt RS)
–, – pathway for *Xenopus* vocalization 157:749 (Wetzel DM et al.)
–, odorant stimulation of *Ambystoma* olfactory mucosa 160:155 (Getchell ML et al.)
–, olfaction in *Ambystoma* 158:479 (Arzt AH et al.)
–, phonotaxis in *Hyperolius* 154:189 (Passmore NI et al.)
–, prey orienting in *Rana* 156:775 (Grobstein P et al.)
–, projection neurons in *Bufo* optic tectum 157:739 (Satou M, Ewert J-P)
–, pulmonary function and metabolism in anurans 152B:125 (Withers PC, Hillman SS)
–, rod disc shedding in frogs 155:763 (Williams DS et al.)
–, sensory inputs to *Rana* optic tectum 154:617 (Gorlick DL et al.)
–, – systems of *Triturus* embryos 152A:529 (Roberts A, Clarke JDW)
–, stress and temperature effects on *Notophthalmus* leukocytes 153A:81 (Bennett MF, Daigle KR)
–, – effects on *Notophthalamus* blood 159:823 (Bennett MF)
–, telencephalon of *Bufo* 158:457 (Finkenstädt T et al.)
–, temporal processing by *Hyla* auditory midbrain 157:763 (Rose GJ et al.)
–, – processing in *Bufo* auditory midbrain 154:211 (Rose GJ, Capranica RR)
–, tongue-muscle-controlling motoneurons in *Bufo* 157:717 (Satou M et al.)
–, transduction in *Rana* mechanoreceptors 157:657 (Watts RE, French AS)
–, trochlear motoneurons in *Rana* 154:233 (Knöpfel T et al.)
–, ventral lateral line taxis in *Xenopus* 154:773 (Elepfandt A)
–, vestibular compensation in *Xenopus* 151A:487 (Rayer B et al.)
–, visual pattern discrimination in *Salamandra* 153A:99 (Finkenstädt T, Ewert J-P)
–, water wave frequency discrimination in *Xenopus* 157:255 (Elepfandt A et al.)
–, wave frequency recognition in *Xenopus* 158:235 (Elepfandt A)
Amphipoda, see *Talitrus*
Anax, respiratory interneurons 154:331 (Komatsu A)
–, target-selective visual interneurons 159:827 (Olberg RM)
Androgen-binding pathways in electric fish 159:535 (Bass AH et al.)
Androgens, direct effect on fish electroreceptor tuning 158:301 (Keller CH et al.)
–, effect on electroreceptor tuning 155:713 (Bass AH, Hopkins CD)
–, effects on female frog vocalizations 158:517 (Hannigan P, Kelley DB)
Anguilla, calcium permeability of neuromast hair cells 158:681 (Baumann M, Roth A)
Aniculus, cardio-regulator nerves 154:871; 155:313 (Yazawa T, Kuwasawa K)
Annelida, action potentials in leech neurons 157:491 (Johansen J, Kleinhaus AL)
–, chemosensory stimuli in *Hirudo* feeding 159:391 (Elliott EJ)
–, fast conducting system in *Hirudo* ganglion 154:781 (Peterson EL)
–, feeding behavior of *Hirudo* 154:449 (Dickinson MH, Lent CM), 457 (Lent CM, Dickinson MH)
–, heartbeat central pattern generator in *Hirudo* 155:783 (Arbas EA, Calabrese RL)
–, integration in *Hirudo* visual interneuron 155:543 (Peterson EL)
–, kinematic study of *Hirudo* crawling 158:593 (Stern-Tomlinson W et al.)
–, lunar-rhythmic reproduction timing in *Typosyllis* 156:553 (Franke H-D)
–, microanalysis of *Hirudo* photoreceptors 154:81 (Walz B, Somlyo AP)
–, monosynaptic connection in *Macrobdella* ganglia 156:65 (Johansen J, Kleinhaus AL)
–, nephridial nerve cell in *Hirudo* 152A:455 (Wenning A)
–, neural control of *Hirudo* hearts 154:367, 381 (Maranto AR, Calabrese RL), 393 (Calabrese RL, Maranto AR)
–, neuronal control of *Hirudo* swimming movements 156:231 (Friesen WO)
–, potassium concentration in *Hirudo* photoreceptors 157:199 (Walz B)
–, resetting *Typosyllis* circalunar rhythm 159:569 (Franke H-D)
–, sensory cell stimulation elicits swimming in *Hirudo* 160:447 (Debski EA, Friesen WO)
–, trigger neurons in *Hirudo* subesophageal ganglion 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
–, visual interneurons in *Hirudo* brain 156:697, 707, 719 (Peterson EL)
Anolis, circadian rhythm 152A:265 (Underwood H)
–, movement detection 159:711 (Fleishman LJ)
–, pineal melatonin rhythms 157:57 (Underwood H)
Anoptichthys, discrimination of spatial intervals 159:701 (Hassan El-S)
–, localization of obstacles 157:837 (Teyke T)
Ant, see *Camponotus*, *Cataglyphis*, *Solenopsis*
Antaea, external auditory structures 155:625 (Fullard JH)
Antarctic fishes, performance of motor systems 154:241 (Montgomery JC, Macdonald JA)
Antelope, see *Rhynchotragus*
Antennal feathered hairs of crayfish 154:45 (Bender M et al.)
– lobes, role of dopamine in honeybee – 160:359 (Macmillan CS, Mercer AR)
– –, sex pheromone-selective projection neurons in moth – 160:553 (Christensen TA, Hildebrand JG)
– movement in crayfish tactile localisation 157:607 (Zeil J et al.)
– responses to leg movements in lobsters 155:351 (Neil DM et al.)

Antifreeze protein production, induction by juvenile hormone in a beetle larva 151 B:233 (Horwath KL, Duman JG)
Apis, alarm pheromone perception 160:613 (Robinson GE)
–, amines on brain evoked potentials 151 A:469 (Mercer AR, Erber J)
–, celestial orientation 155:605 (Rossel S, Wehner R)
–, color effects in spatial vision 151 A:441 (Menzel R, Lieke E)
–, conditioned responding to magnetic fields 157:67 (Walker MM, Bitterman ME)
–, current source-density in mushroom bodies 154:569 (Kaulen P et al.)
–, dance orientation 157:183 (Dyer FC)
–, heritable odor discrimination 159:251 (Getz WM et al.)
–, landmark learning 151 A:521 (Cartwright BA, Collett TS)
–, learning of landmark colours 159:69 (Cheng K et al.)
–, light response in magnetic field 154:865 (Leucht T)
–, light-induced trans-cis isomerization of retinal 154:549 (Schwemer J et al.)
–, memory and sun compensation 160:621 (Dyer FC)
–, microanalysis of drone retina 156:213 (Coles JA, Rick R)
–, natural phototaxis and colour vision 157:311 (Menzel R, Greggers U)
–, ocellar interneurons 154:683 (Milde JJ)
–, – interneurons 155:151 (Milde JJ, Homberg U)
–, olfactory sensitivity 160:239 (Getz WM, Smith KB)
–, polarization pattern analysis 154:607 (Rossel S, Wehner R)
–, processing of antennal information in mushroom body neurons 154:825 (Homberg U)
–, role of dopamine in antennal lobes 160:359 (Macmillan CS, Mercer AR)
–, synapse frequency after chromatic deprivation 151 A:477 (Hertel H)
–, temporal acuity of vision 155:297 (Srinivasan M, Lehrer M)
–, – resolution of colour vision 157:579 (Srinivasan M, Lehrer M)
–, transfer of a time signal 160:3 (Martin H, Martin U)
–, vibration signals of queens 158:605 (Michelsen A et al.)
–, visual scanning behavior 157:405 (Lehrer M et al.)
Aplysia, bag cell actions on arteries 157:31 (Ligman SH, Brownell PH)
–, branchial ganglion functions 156:35 (Kurokawa M, Kuwasawa K)
–, cardioactive neuropeptides 156:659 (Lloyd PE et al.)
–, circadian organization 153 A:133 (Lickey ME et al.); 156:293 (Jordan WP et al.)
–, defensive responses 159:339 (Walters ET, Erickson MT)
–, eye circadian period 151 A:253 (Woolum JC, Strumwasser F)
–, innervation of gill 157:483 (Kurokowa M, Kuwasawa K)
Apteronotus, electrosensory neurons 154:199 (Saunders J, Bastian J)
–, gain control in electrosensory system 158:505 (Bastian J)
–, hormone-induced changes in EOD and electroreceptor tuning 160:385 (Meyer JH et al.)
–, steroid influences upon pacemaker discharge frequencies 154:659 (Meyer JH)
Aranaeae, hemolymph composition in *Eurypelma* 152 B:73 (Schartau W, Leidescher T)
–, physiological optics of jumping spider eyes 157:391 (Blest AD)
–, strains in exoskeleton 157:115 (Blickhan R, Barth FG)
–, vibration sensitive neurons in *Cupiennius* CNS 160:467 (Speck-Hergenröder J, Barth FG)
–, vibratory stimuli and *Cupiennius* behavior 152 A:347, 361 (Hergenröder R, Barth FG)
–, web-construction in *Araneus* 159:275 (Vollrath F)
Araneus, orientation to gravity in web-construction 159:275 (Vollrath F)
Archimantis, wind-sensitive interneurones 159:773 (Boyan GS, Ball EE)
Arginine vasotocin, effect on prostaglandin-induced phonotaxis in toad 156:823 (Schmidt RS)
Argyropelecus, eye lens pigmentation 159:791 (McFall-Ngai M et al.)
Arterial system, bag cell action on *Aplysia* – 157:31 (Ligman SH, Brownell PH)
Arthropoda, see Acari, Aranaea, Crustacea, Insecta, Ixodoidea
Arthropods, visualization of neurons 158:625 (Reichert H, Krenz WD)
Astacus, antennal feathered hairs 154:45 (Bender M et al.)
–, pyrethroid-induced activity in stretch receptor neuron 159:43 (Ruigt GSF et al.)
–, visualization of neurons 158:625 (Reichert H, Krenz WD)
ATP-sensitive olfactory cells in lobster 158:331 (Carr WES et al.)
Audiograms of a South Indian bat community 154:133 (Neuweiler G et al.)
Auditory cortex, evoked potentials in porpoise – 158:705 (Popov VV et al.)
– –, FM-FM sensitive neurons in bat – 159:331 (Taniguchi I et al.)
– –, single unit characteristics in bat – 155:821 (Ostwald J)
– directional information, processing in grasshopper CNS 158:363 (Ronacher B et al.)
– – in crickets 153 A:523 (Boyd P, Lewis B)
– fibers, central projections of tettigoniid – 151 A:389 (Oldfield BP)
– forebrain nucleus, 2-deoxyglucose study in avian – 156:1 (Müller SC, Scheich H)
– –, tonotopic organization in starlings 158:639 (Rübsamen R, Dörrscheidt GJ)
– habituation in the bullfrog 151 A:423 (Megela AL, Capranica RR)
– input to locust flight system 156:79 (Boyan GS)
– – to moth flight muscle motor neurons 160:23 (Madsen BM, Miller LA)
– interneuron responses in freely moving grasshopper 158:689, 697 (Wolf H)
– – switching-off during stridulation in grasshopper 158:861 (Wolf H, Helversen O von)
– neuron responses to model songs in locusts 156:845 (Römer H, Seikowsky U)
– neurons, 'biological microphones' in insects 158:647 (Rheinlaender J, Römer H)
– –, central, after unilateral foreleg amputation in crickets 158:291 (Schildberger K et al.)
– –, alternative tonotopic organisations of tettigoniid – 155:689 (Oldfield BP)
– pathways, central, of the carp 156:267 (Echteler SM)
– receptor responses in noctuoid moths 154:441; 156:689; 159:115 (Pérez M, Coro F)
– receptors, discrete depolarizations 152 A:475 (Hill KG)
– –, intensity coding in moth – 154:287 (Coro F, Pérez M)
– –, membrane potentials 152 A:483 (Hill KG)
– –, physiology and tonotopic organization of cricket – 159:457 (Oldfield BP et al.)
– resolution in azimuth by tits 158:383 (Klump GM et al.)
– responsiveness, modulation in locusts 158:813 (Boyan GS)
– self-stimulation by vocalization in bats 160:635 (Pietsch G, Schuller G)
– sensilla, organization of bushcricket – 158:27 (Oldfield BP, Hill KG)
– sensitivity of fish-catching bat 155:91 (Wenstrup JJ)
– –, external, in moths 155:625 (Fullard JH)
– system, development in the locust 151 A:499 (Boyan GS)
– thalamic responses in bullfrog 160:477 (Mudry KM, Capranica RR)
– units in bat nuclei of lateral lemniscus 160:395 (Metzner W, Radtke-Schuller S)
Austrapotamobius, amino acid receptors 152 A:405; 155:219 (Hatt H)
–, bimodal neuron on walking legs 159:611 (Hatt H)
–, excitatory glutamate-activated channel 159:579 (Franke Ch et al.)
–, GABA activated inhibitory chloride channel 159:591 (Franke Ch et al.)
–, – miniature currents in muscle 159:13 (Finger W, Martin C)
–, pyridine-sensitive neurons 152 A:395 (Hatt H); 154:855 (Hatt H, Schmiedel-Jakob I)
Autophagy, circadian rhythm in rat visual cells 156:669 (Remé C et al.)

Aves, accommodation in owl eyes 151A:277 (Murphy CJ, Howland HC)
–, activity patterns of *Sturnus* cochlear ganglion units 157:161 (Manley GA et al.)
–, antidiuretic hormone in Pekin duck 151B:241 (Gray DA, Simon E)
–, auditory resolution in azimuth by *Parus* 158:383 (Klump GM et al.)
–, brain temperature regulation in *Gallus* 153B:241 (Midtgård U et al.)
–, circadian organization in pigeon 154:59 (Ebihara S et al.)
–, – rhythmicity of *Sturnus* 154:669 (Gänshirt G et al.)
–, circannual rhythm of food intake in *Lonchura* 156:429 (Bhatt D, Chandola A)
–, cochlear ganglion unit activity in *Sturnus* 157:643 (Oeckinghaus H)
–, compass orientation in homing pigeons 153A:55 (Füller E et al.)
–, corneal accommodation in chick and pigeon 160:375 (Schaeffel F, Howland HC)
–, cutaneous nerve fibers of the pigeon 154:817 (Necker R, Meinecke CC)
–, deflector effect and olfaction in homing pigeons 159:465 (Foà A et al.)
–, directional components in pigeon orientation 159:143 (Wallraff HG)
–, dusk orientation in *Zonotrichia* 159:107 (Able KP, Cherry JD)
–, effects on activity rhythms in *Carpodacus* 153A:413 (Fuchs JL)
–, electrical gonadostimulation in *Coturnix* 154:583 (Ohta M et al.)
–, eye of *Sturnus* 159:545 (Martin GR)
–, flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
–, four spectral classes of cone in bird retinas 159:473 (Chen D-M, Goldsmith TH)
–, functional organization of auditory field L 156:1 (Müller SC, Scheich H)
–, magnetic cells in pigeon visual system 159:619 (Semm P, Demaine C)
–, mechanoreceptors in pigeon skin 156:391 (Necker R)
–, neural basis of pigeon magnetic compass 155:283 (Semm P et al.)
–, nocturnal hypothermia in *Parus* 151B:109 (Reinertsen RE, Haftorn S)
–, oscillators in *Gallus* pineal gland 154:435 (Takahashi JS, Menaker M)
–, photopic spectral sensitivity of chicken retina 160:151 (Wortel JF et al.)
–, photopigment in *Coturnix* brain photoreceptors 157:519 (Foster RG, Follett BK)
–, pigeon navigation 155:139 (Wallraff HG et al.); 156:737 (Benvenuti S, Wallraff HG)
–, preferred compass direction in pigeon homing 157:469 (Wiltschko R, Wiltschko W)
–, prey capture under water by *Egretta* 160:517 (Katzir G, Intrator N)
–, Purkinje cell responses to pineal indoles in pigeon 154:675 (Semm P, Vollrath L)
–, rhythmicity of testosterone-dependent behaviors in *Coturnix* 158:17 (Wada M)
–, sensory inputs to pigeon nucleus basalis 159:33 (Schall U, Delius JD)
–, – responses of chicken geniculate ganglion 160:683 (Gentle MJ)
–, serotonin and circadian rhythms of *Passer* 156:145 (Cassone VM, Menaker M)
–, sound coding in auditory midbrain of Accipitridae and Falconidae 157:149 (Calford MB et al.)
–, temperature effects of pigeon auditory fibers 156:209 (Schermuly L, Klinke R)
–, timing of testicular regression in *Zonotrichia* 153A:489 (Moore MC et al.)
–, tonotopy of *Sturnus* auditory forebrain 158:639 (Rübsamen R, Dörrscheidt GJ)
–, unmyelinated nerve fibres in chicken 157:383 (Hodgkiss JP)
–, vibrational sensitivity in pigeon 152A:251 (Shen J-X)
–, visual optics of kingfishers 160:137 (Moroney MK, Pettigrew JD)
–, – pigments and oil droplets in *Spheniscus* 156:71 (Bowmaker JK, Martin GR)
–, vocalization in *Steatornis* 156:243 (Suthers RA, Hector DH)
–, water balance in *Dromaius* 153B:235 (Dawson TJ et al.)
Axolotl, see *Ambystoma*
Azimuth, auditory resolution by tits 158:383 (Klump GM et al.)

B

Bacterial symbionts in a gutless clam 152B:3 (Felbeck H)
Bag cell neurons, action on *Aplysia* arteries 157:31 (Ligman SH, Brownell PH)
Barathra, auditory input to motor neurons 160:23 (Madsen BM, Miller LA)
Bat, see *Cormura, Desmodus, Eptesicus, Hipposideros, Lasiurus, Megaderma, Myotis, Noctilio, Nyctalus, Pipistrellus, Pteronotus, Rhinolophus, Rhinopoma, Saccopteryx*
Bathynomus, nervous regulation in the heart 154:883 (Kihara A, Kuwasawa K)
–, neural control of cardio-arterial valves 157:529 (Kihara A et al.)
Bats, audiograms of a South Indian community 154:133 (Neuweiler G et al.)
Bee, see *Apis*
Beetle, see Coleoptera
Behavior, acoustic communication in electric fish 159:297 (Crawford JD et al.)
–, – communication in tree frogs 155:585 (Brenowitz EA et al.)
–, auditory, of the cricket 155:725 (Huber F et al.)
–, – sensitivity of a mormyrid 753 (McCormick CA, Popper AN)
–, chasing, mechanosensory control of beetle – 158:405 (Bendele H)
–, chemoreception in a sea star 157:537 (Valentinčič T)
–, chemotactic, of octopus 158:375 (Chase R, Wells MJ)
–, choice and non-choice paradigms in cricket phonotaxis 157:279 (Doherty JA)
–, cichlid social signal 160:89, 99 (Muske LE, Fernald RD)
–, classical conditioning and retention in fruitfly 157:263 (Tully T, Quinn WG)
–, communication by air vortex rings in crickets 160:79 (Heinzel H-G, Dambach M)
–, compensation for altered cercal position in cockroach 155:31 (Comer C, Camhi JM)
–, dance orientation in Asian honey bee 157:183 (Dyer FC)
–, dealation and oviposition by virgin queen fire ants 153A:467 (Fletcher DJC, Blum MS)
–, defensive responses in *Aplysia* 159:339 (Walters ET, Erickson MT)
–, dual inhibitory system regulating fly feeding 158:713 (Bowdan E, Dethier VG)
–, echolocation in *Rhinolophus* 157:39 (Schnitzler H-U et al.)
–, escape, giant and non-giant systems in crayfish – 153A:3 (Reichert H, Wine JJ)
–, –, of cockroach 160:571 (Comer CM, Dowd JP)
–, feeding of the leech 154:449 (Dickinson MH, Lent CM), 457 (Lent CM, Dickinson MH)
–, –, chemosensory stimuli in leech – 159:391 (Elliott EJ)
–, foraging, in echolocating bats 155:559 (Habersetzer J et al.)
–, honeybee conditioned responding to magnetic fields 157:67 (Walker MM, Bitterman ME)
–, invariance of visual stimulus efficacy in flies 154:555 (Horn E, Knapp A)
–, Mauthner vs non-Mauthner startle circuits in zebrafish 155:813 (Eaton RC et al.)
–, motion perception in toads 152A:241 (Burghagen H, Ewert J-P)
–, movement detection in prey-catching bats 159:403 (Link A et al.)
–, neural organization of moth ecdysis – 155:407, 423 (Weeks JC, Truman JW)
–, nipple-search-, sensory modalities in rabbit 157:599 (Distel H, Hudson R)
–, orienting, to the third dimension in frogs 156:775 (Grobstein P et al.)
–, pattern recognition and directional hearing in a grasshopper 154:837 (Helversen D von)
–, pheromonal queen control over production of sexuals in fire ants 159:741 (Vargo EL, Fletcher DJC)
–, phonotactic specificity in crickets 157:223 (Doolan JM, Pollack GS)
–, plunge reaction of backswimmer 155:319 (Schwind R)
–, postural, role of pattern-initiating interneurons in crayfish – 169 (Moore D, Larimer JL)
–, preparatory, rhythm in a moth 155:521 (Truman JW)

–, reflex, in larval tobacco hornworm 160:315 (Weeks JC, Jacobs GA)
–, responses to vibratory stimuli in a spider 152A:347, 361 (Hergenröder R, Barth FG)
–, spacing, in bushcrickets 159:627 (Römer H, Bailey WJ)
–, spatial parameter recognition in echolocating bat 155:67 (Joermann G)
–, temperature effects on wasp courtship 155:233 (Assem J van den et al.)
–, testosterone levels and lizard territoriality 158:159 (Moore MC)
–, vibrational sensitivity in pigeon 152A:251 (Shen J-X)
–, vision of moving stimuli by bees 155:297 (Srinivasan M, Lehrer M)
–, visual processing of color stimuli in butterfly 160:645 (Scherer C, Kolb G)
–, – scanning in honeybees 157:405 (Lehrer M et al.)
–, wavelength discrimination in goldfish 158:203 (Neumeyer C)
Beta-adrenergic regulation of salamander olfactory glands 155:435 (Getchell ML, Getchell TV)
Bird, see Aves
Birthday, 80th, on the occasion of Professor Autrum's – 160:1 (Neurweiler G, Heiligenberg W)
Blood, stress effects on newt – during early regeneration 159:823 (Bennett MF)
– acid-base balance in trout 152B:53 (Thomas S)
– cells, volume regulatory mechanisms in *Glycera* 151B:133 (Costa CJ, Pierce SK)
– worm, see *Glycera*
Blood, see also haemolymph, hemolymph
Blowfly, see *Calliphora, Lucilia, Phormia*
Blue induced pigment migration in moth retina 159:353 (Hamdorf K et al.)
Boa, infrared tectal thresholds 151A:461 (Cock Buning T de)
Boettcherisca, stereospecificity of furanose site in sugar receptor 477 (Shimada I et al.)
–, visual interneurons in lobula complex 157:831 (Umeda K, Tateda H)
Bombyx, pheromone-triggered flip-flopping interneurons 152A:297 (Olberg RM)
Brachydanio, Mauthner vs non-Mauthner startle circuits 155:813 (Eaton RC et al.)
Brain, abducens neurons and extraocular reflex organization in frogs 158:179 (Dieringer N, Precht W)
–, action of melatonin on guinea pig hippocampal cells 157:23 (Zeise ML, Semm P)
–, androgen-binding in electric fish – 159:535 (Bass AH et al.)
–, auditory evoked responses to species-specific calls in frog thalamus 160:477 (Mudry KM, Capranica RR)
–, – neuron response to model songs in locusts 156:845 (Römer H, Seikowski U)
–, – neurons in cricket – 155:171 (Schildberger K)
–, – responses of bat superior collicular neurons 154:407 (Jen PH et al.)
–, bat collicular neurons respond to ultrasonic echoes from wing beating insects 155:121 (Schuller G)
–, binocularly driven neurons in frog optic tectum 157:47 (Gaillard F)
–, central vestibular physiology in antarctic fish 160:289 (Montgomery JC, McVean AR)
–, coding of sound location and frequency in bird auditory midbrain 157:149 (Calford MB et al.)
–, control of bat vocalization by neurons of nucleus ambiguus 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
–, cortical FM-FM sensitive neurons in bats 159:331 (Taniguchi I et al.)
–, current source-density in bee mushroom bodies 154:569 (Kaulen P et al.)
–, deoxyglucose mapping of nervous activity in fly – 155:471 (Buchner E et al.); 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
–, development of neurons in mouse olfactory bulb 157:789 (Schäfer HJ, Schmidt U)
–, diencephalic link between sensory processing and motor output of fish JAR 154:895 (Bastian J, Yuthas J)
–, directional sensitivity of bat superior colliculus neurons 154:253 (Poussin C, Schlegel P)
–, effect of repeated stimulation on goldfish mitral cells 158:563 (Schild D, Zippel HP)
–, – of steroids on fish pacemaker discharge 154:659 (Meyer JH)
–, effects of amines on evoked potentials in bee – 151A:469 (Mercer AR, Erber J)
–, elasmobranch electroreceptive midbrain 158:43 (Schweitzer J)
–, electrical stimulation of quail hypothalamic photosensitive area 154:583 (Ohta M et al.)
–, electrophysiology of teleostean nucleus isthmi 152A:545 (Williams B et al.)
–, electrosensory diencephalic nuclei in an elasmobranch 153A:331 (Schweitzer J)
–, evoked potentials in porpoise auditory cortex 158:705 (Popov VV et al.)
–, frog tectal neurons responding to visual stimuli 159:721 (Matsumoto N et al.)
–, functional organization of avian auditory field L 156:1 (Müller SC, Scheich H)
–, gain control in fish electrosensory lateral line lobe 158:505 (Bastian J)
–, gating of sensory information in electric fish – 159:311 (Heiligenberg W, Rose G)
–, glucose utilization and visual stimuli in toad telencephalon 158:457 (Finkenstädt T et al.)
–, gustatory intensity discrimination in rat nucleus tractus solitarius 155:271 (Maes FW, Erickson RP)
–, in vivo recordings of snail neuroendocrine cells 158:853 (Ter Maat A et al.)
–, inferior colliculus of house mouse 156:619, 637 (Ehret G, Moffat AJM)
–, input to respiratory motoneurons in lamprey – 157:291 (Thompson KJ)
–, interactions of visual, magnetic and vestibular inputs in pigeon – 155:283 (Semm P et al.)
–, interneurons, reporting course deviation in locusts 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
–, magnetic cells in pigeon basal optic root and optic tectum 159:619 (Semm P, Demaine C)
–, manipulation of serotonin phase shifts circadian rhythms 156:145 (Cassone VM, Menaker M)
–, mapping of activity in mesencephalic and diencephalic structures of toad – 156:433 (Finkenstädt T et al.)
–, metabolic mapping of acoustic effects in frog – 160:693 (Zimmermann E, Rahmann H)
–, multimodal interneurons in cricket – 154:71 (Schildberger K)
–, neural basis of pigeon magnetic compass 155:283 (Semm P et al.)
–, – coding of EOD difference frequencies in electric fish – 158:613 (Rose G, Heiligenberg W)
–, – correlates for frog calling 154:847 (Schmidt RS)
–, – correlates of novelty detection in electric fish – 159:191 (Grau HJ, Bastian J)
–, – pathway for clawed frog vocalization 157:749 (Wetzel DM et al.)
–, neuronal pathways of toad optic tectum to tongue-muscle-controlling motoneurons 157:717 (Satou M et al.)
–, neurons in fish electrosensory lateral line lobe 154:199 (Saunders J, Bastian J)
–, neurophysiology of bat nuclei of lateral lemniscus 160:395 (Metzner W, Radtke-Schuller S)
–, organization of carp central auditory pathways 156:267 (Echteler SM)
–, phase and amplitude sensitivity of fish torus semicircularis 159:813 (Rose G, Heiligenberg W)
–, pheromone-selective neurons in moth antennal lobes 160:553 (Christensen TA, Hildebrand JG)
–, presynaptic inhibition in crayfish – 156:477 (Glantz RM et al.), 605 (Wang-Bennett LT, Glantz RM)
–, processing of antennal information in bee mushroom body neurons 154:825 (Homberg U)
–, – of visual stimuli by salamander tectal neurons 153A:85 (Finkenstädt T, Ewert J-P)
–, projection neurons in toad optic tectum 157:739 (Satou M, Ewert J-P)
–, projections of moth CO_2 receptors to deutocerebrum 158:741 (Bogner F et al.)
–, Purkinje cell responses to pineal indoles in pigeon and guinea pig 154:675 (Semm P, Vollrath L)
–, respiratory bursts in lamprey rostral medulla 157:303 (Rovainen CM)

Brain, respiratory pattern generation in lamprey – 158:91 (Russell DF)
–, responses of bat inferior colliculus 157:797 (O'Neill WE)
–,– of frog trochlear motoneurons 154:233 (Knöpfel T et al.)
–,– of single units in bat inferior colliculus to acoustic signals 153A:67 (Bodenhamer RD, Pollak GD)
–,– to biologically significant stimuli in toad 154:89 (Laming PR, Ewert J-P)
–, role of dopamine in honeybee – 160:359 (Macmillan CS, Mercer AR)
–,– of suprachiasmatic nuclei in circadian rhythms 154:221 (Davis FC, Gorski RA)
–, SCN lesion effects on hamster circadian rhythms 156:803 (Pickard GE, Turek FW)
–, sensory inputs to frog optic tectum 154:617 (Gorlick DL et al.)
–,– inputs to pigeon nucleus basalis prosencephali 159:33 (Schall U, Delius JD)
–,– responses of lamprey dorsal cells 156:181 (Rovainen CM, Yan Q)
–, single units in bat auditory cortex 155:821 (Ostwald J)
–, stomatogastric IV neurons in lobster – 154:27 (Claiborne BJ, Selverston AI)
–, tectal infrared sensitive neurons in snakes 151A:461 (Cock Buning T de)
–, temporal processing by treefrog auditory system 157:763 (Rose GJ et al.)
–,– processing in toad auditory midbrain 154:211 (Rose GJ, Capranica RR)
–, tonotopic organization of starling auditory forebrain 158:639 (Rübsamen R, Dörrscheidt GJ)
–, transfer of time signal in honeybee – 160:3 (Martin H, Martin U)
–, visual and saccadic activity in goldfish torus longitudinalis 155:333 (Northmore DPM)
–,– interneurons in leech – 156:697, 707, 719 (Peterson EL)
–,– pattern discrimination through neural interactions in salamanders 153A:99 (Finkenstädt T, Ewert J-P)
–,– responses in fish optic tectum 152A:147 (Kawasaki M, Aoki K)
Brain gangliosides in vertebrates 151B:215 (Rahmann H, Hilbig R)
Brienomyrus, androgen-binding in brain and electric organ 159:535 (Bass AH et al.)
–, androgens and electroreceptor tuning 155:713 (Bass AH, Hopkins CD)
Bristle receptors in crickets 156:357 (Murphey RK), 369 (Johnson SE, Murphey RK), 381 (Murphey RK et al.)
Bufo, accommodation and depth vision 158:133 (Douglas RH et al.)
–, contractile performance of sartorius muscle 151B:127 (Renaud JM, Stevens ED)
–, glucose utilization in telencephalon 158:457 (Finkenstädt T et al.)
–, mapping of brain activity 156:433 (Finkenstädt et al.)
–, motion perception 152A:241 (Burghagen H, Ewert J-P)
–, projection neurons in optic tectum 157:739 (Satou M, Ewert J-P)
–, prostaglandin-induced mating call phonotaxis 156:823 (Schmidt RS)
–, pulmonary function and metabolism 152B:125 (Withers PC, Hillmann SS)
–, responses to biologically significant stimuli in brain 154:89 (Laming PR, Ewert J-P)
–, tadpole kin recognition 156:565 (Waldman B)
–, temporal processing in auditory midbrain 154:211 (Rose GJ, Capranica RR)
–, tongue-muscle-controlling motoneurons 157:717 (Satou M et al)
Bug, see Heteroptera
Bulla, ocular circadian pacemaker system 155:365 (Block GD et al.), 379 (McMahon DG et al.), 387 (Block GD, McMahon DG)
Bullfrog, see *Rana*
Bushcricket, see *Caedicia, Decticus, Mygalopsis, Polichne, Tettigonia*
Busycon, energy metabolism in ventricle 153B:159 (Ellington WR)
Butterflies, spectral sensitivity of photoreceptors studied with Fourier Interferometric Stimulation 160:247 (Steiner A et al.)
Butterfly, see also Lepidoptera, *Ocybadistes, Papilio, Pieris*

C

Cable properties of locust ocellar neurons 158:339 (Ammermüller J)
Caedicia, auditory sensilla 158:27 (Oldfield BP, Hill KG)
–, physiology of ascending auditory interneurons 152A:495 (Oldfield BP, Hill KG)
–, projections of auditory fibres 151A:389 (Oldfield BP)
Caiman, temperature and auditory frequency tuning 155:19 (Smolders JWT, Klinke R)
Calcium, effect on ciliary reversal in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
–, effects on mussel gill abfrontal ciliated epithelial cells 155:445, 457 (Stommel EW)
–, influence on fly photoreceptor response 156:53 (Hochstrate P, Hamdorf K)
–, permeability of eel neuromast hair cells to – 158:681 (Baumann M, Roth A)
–, role in lamellibranch gill ciliar movements 157:441, 451 (Stommel EW, Stephens RE)
Callinectes, closer apodeme tension receptors 157:355 (Hartman HB)
Calling behavior, internal oscillator in treefrogs 156:233 (Zelick R, Narins PM)
– song tracking by one-eared crickets 155:725 (Huber F et al.)
Calliphora, angular sensitivity of photoreceptors 154:761 (Hateren JH van); 155:239 (Smakman JGJ et al.); 160:501 (Smakman JGJ, Stavenga DG)
–, calcium and photoreceptor response 156:53 (Hochstrate P, Hamdorf K)
–, contribution of colour receptors to motor output 157:417 (Kirschfeld K, Vogt K)
–, electrical coupling of neuro-ommatidial photoreceptors 158:795 (Hateren JH van)
–, GABAergic neurons in visual system 159:241 (Datum K-H et al.)
–, giant fibre pathway 158:529 (Bacon JP, Strausfeld NJ)
–, invariance of visual stimulus efficacy 154:555 (Horn E, Knapp A)
–, maps of acute eyezones 156:525 (Land MF, Eckert H)
–, neck motor system 160:205 (Strausfeld NJ et al.), 225 (Milde JJ et al.)
–, neural coding of salt taste quality 159:75 (Maes FW, Harms G), 89 (Maes FW, Ruifrok ACC)
–, non-local interactions in photoreceptors 154:175 (Minke B, Kirschfeld K)
–, phosphorylation of opsin in the retina 155:39 (Paulsen R, Bentrop J)
–, photoreceptor mitochondrial activity 160:195 (Tinbergen J, Stavenga DG)
–, photoreceptors in dorsal marginal ommatidia 154:157 (Hardie RC)
–, renewal of visual pigment 154:535 (Schwemer J)
–, spectral characteristics of isolated rhabdoms 155:47 (Paulsen R)
–,– sensitivity 158:669 (Paul R et al.)
–, variability in taste responses 157:211 (van der Molen JN et al.)
–, wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
Camponotus, visual adaptation 160:11 (Menzi U)
Cancer, inhibitory limb innervation 156:305 (Wiens TJ, Rathmayer W)
–, innervation of pyloric region 159:227 (Hooper SL et al.)
Carassius, cone polarization sensitivity 160:459 (Hawryshyn CW, McFarland WN)
–, effect of rest deprivation on motor activity 157:817 (Tobler I, Borbély AA)
–, olfactory responses to steroidal pheromones 160:305 (Sorensen PW et al.)
–, repeated stimulation of mitral cells in olfactory bulb 158:563 (Schild D, Zippel HP)
–, temperature effects on intestinal transport 151B:163 (Groot JA et al.)
–, visual and saccadic activity in torus longitudinalis 155:333 (Northmore DPM)
–, wavelength discrimination 158:203 (Neumeyer C)
Carausius, antennal olfactory receptors 152A:459 (Tichy H, Loftus R)
–, cold receptor responses 160:33 (Tichy H, Loftus R)
–, control of leg protraction 155:771 (Dean J)
–, hygroreceptor responses 160:43 (Tichy H)
–, neurodepressing factor in haemolymph 152A:283 (Finlayson LH et al.)

–, sense organs controlling leg movement 154:695 (Cruse H et al.)
Carbon dioxide, moth receptors sensitive to – 158:741 (Bogner F et al.)
Carcinus, elastic strand receptor without impulses 160:599 (Cannone AJ)
–, leg muscle innervation 158:665 (Rathmayer W, Bevengut M)
–, neural control of ventilation 155:397 (DiCaprio RA, Fourtner CR)
–, reflex motor control of muscle receptor 153A:309 (Cannone AJ, Bush BMH)
Cardiac ganglion driver potentials in lobster neurons 151A:329 (Tazaki K, Cooke IM)
– – ionic basis of driver potentials in neurons of lobster – 157:845 (Berlind A)
– – topographical localization of function in a crab 151A:311 (Tazaki K, Cooke IM)
Cardiac, see also heart
Cardio-, see also heart
Cardioactive neuropeptides in *Aplysia* 156:659 (Lloyd PE et al.)
Cardio-arterial valves, neural control of isopod – 157:529 (Kihara A et al.)
Cardiorespiratory responses of snakes 152B:59 (Lillywhite HB et al.)
Cardisoma, peptides in sinus gland 153B:191 (Stuenkel EL), 207 (Newcomb RW)
Carp, see *Cyprinus*
Carpodacus, effects on activity rhythms 153A:413 (Fuchs JL)
Cataglyphis, electrophysiology of different eye regions 158:1 (Labhart T)
–, polarized skylight orientation 158:145 (Fent K)
–, visual adaptation 160:11 (Menzi U)
Catecholamines in the sea lamprey 152B:35 (Dashow L, Epple A)
Catfish, see *Ictalurus*
Cations, divalent, effect on leech neuronal action potentials 157:491 (Johansen J, Kleinhaus AL)
Cave fish, see *Anoptichthys*
Central fast conducting system of the leech 154:781 (Peterson EL)
Central nervous system, auditory interneurones in moth – 158:391 (Boyan GS, Fullard JH)
– – –, auditory neurons in cricket – after unilateral foreleg amputation 158:291 (Schildberger K et al.)
– – –, control of slug heart activity 156:539 (Grega DS, Prior DJ)
– – –, development of toad vestibulo-ocular reflex 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
– – –, diversity of cerebral ganglia neurons in a gastropod 153A:533 (McClellan AD)
– – –, ectopic neurons in crickets 156:381 (Murphey RK et al.)
– – –, functions of opisthobranch branchial ganglion 156:35 (Kurokawa M, Kuwasawa K)
– – –, GABAergic activities in locust – 157:343 (Breer H, Heilgenberg H)
– – –, giant fibre pathway in flies 158:529 (Bacon JP, Strausfeld NJ)
– – –, interneurons of crayfish swimmeret system 158:215 (Paul DH, Mulloney B)
– – –, intersegmental interneurones in locust – 159:171 (Laurent G)
– – –, local inhibitor of motor giant neurons in crayfish – 158:69 (Kirk MD et al.)
– – –, olfactory bulb potentials in carp 152A:319 (Satou M et al.)
– – –, organisation of gaze stabilizing reflexes in frog and turtle 153A:495 (Dieringer N et al.)
– – –, processing of auditory directional information in grasshoppper – 158:363 (Ronacher B et al.)
– – –, processing of vibratory signals in locust ventral nerve cord 156:45 (Čokl A et al.)
– – –, responses to sound in locust SOG 156:413 (Boyan GS, Altman JS)
– – –, role of plurisegmental interneurons in grasshopper stridulation 158:413, 429 (Hedwig B)
– – –, sensory responses from chicken geniculate ganglion 160:683 (Gentle MJ)
– – –, somatotopic sensory projections in moth larvae 157:1 (Levine RB et al.)
– – –, steroid regulation of peptide action in moth – 157:423 (Morton DB, Truman JW)
– – –, target-selective visual interneurons descending from dragonfly brain 159:827 (Olberg RM)
– – –, thoracic afferent projections of cricket bristle hairs 156:369 (Johnson SE, Murphey RK)
– – –, thoracic interneurons in cockroach giant interneuron pathways 159:639 (Ritzmann RE, Pollack AJ)
– – –, trigger neurons in leech subesophageal ganglion 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
– – –, tuning of vibration sensitive neurons in spider – 160:467 (Speck-Hergenröder J, Barth FG)
– – –, vibrational processing in crab – 157:91, 105 (Hall J)
– – –, visual interneurons in fleshfly lobula complex 157:831 (Umeda K, Tateda H)
– – –, wind-sensitive interneurones in mantis terminal ganglion 159:773 (Boyan GS, Ball EE)
– respiratory interneurons in dragonfly larva – 154:331 (Komatsu A)
Centrophobism in *Drosophila* 156:319, 329 (Götz KG, Biesinger R)
Cephalic gland, role in crayfish molt 152B:91 (Jegla TC et al.)
Cephaloscyllium, eye movement dynamics 158:723 (Paulin MG, Montgomery JC)
Cercal system, second, in crickets 156:257 (Murphey RK)
– –, directional sensitivity of giant interneurons in insects 154:805 (Rozhkova GI et al.)
– –, range fractionation in cricket – 155:485, 495 (Shimozawa T, Kanou M)
Cerci, ectopic, in crickets 156:381 (Murphey RK et al.)
–, responses to altered position in the cockroach 155:31 (Comer C, Camhi JM)
Cerebral ganglia neurons, effects on buccal motor patterns in gastropod 153A:533 (McClellan AD)
Chemo-orientation of male granary beetles to female pheromone 158:729 (Tobin TR, Bell WJ)
Chemoreception, acetate and folate-induced membrane hyperpolarization in *Paramecium* 160:525, 537 (Preston RR, Van Houten JL)
–, adrenergic regulation of salamander olfactory glands 155:435 (Getchell ML, Getchell TV)
–, amino acid stimulation of crayfish leg receptors 155:219 (Hatt H)
–, AMP as chemoattractant for a marine shrimp 153A:47 (Carr WES, Thompson HW)
–, ATP-sensitive olfactory cells in lobster 158:331 (Carr WES et al.)
–, bimodal neuron on crayfish walking legs 159:611 (Hatt H)
–, CO_2 receptors on moth labial palps 158:741 (Bogner F et al.)
–, directional proboscis extension in blowfly 160:367 (Yetman S, Pollack GS)
–, effect of amiloride on hamster taste responses 160:281 (Herness MS)
–, – of temperature on crayfish leg receptors 152A:395, 405 (Hatt H)
–, effectiveness of cockroach sex pheromones 152A:309 (Sass H)
–, excitability of insect olfactory receptors 152A:459 (Tichy H, Loftus R)
–, facial nerve sensory responses in chicken 160:683 (Gentle MJ)
–, folate binding in *Paramecium* 155:113 (Schulz S et al.)
–, food-aversion to amino acid deficient diets in slugs 159:281 (Delaney K, Gelperin A)
–, gustatory responses to amino acids of trout palate 153A:423 (Marui T et al.)
–, – specificity for amino acids in carp facial taste system 153A:299 (Marui T et al.)
–, heritable odor discrimination in honeybees 159:251 (Getz WM et al.)
–, in an isopod 152A:219 (Seelinger G)
–, ipsdienol-specific receptors in bark beetles 154:591 (Mustaparta H et al.)
–, localization of – in *Paramecium* 160:537 (Preston RR, Van Houten JL)
–, modulation of alarm pheromone perception in honeybee 160:613 (Robinson GE)
–, neural coding of gustatory intensity discrimination 155:263 (Maes FW), 271 (Maes FW, Erickson RP)
–, – coding of salt taste quality in fly 159:75 (Maes FW, Harms G), 89 (Maes FW, Ruifrok ACC)
–, nipple-search pheromone in rabbits 155:13 (Hudson R, Distel H)

Chemoreception, non-olfactory and non-gustatory, in a fish 154:167 (Silver WL, Finger TE)
–, odorant stimulation of salamander olfactory mucosa 160:155 (Getchell ML et al.)
–, olfaction after section of anterior commissure in homing pigeons 159:465 (Foà A et al.)
–, olfactory cells in bark beetle and its predator 157:335 (Tømmerås BÅ)
–, – discrimination in a fly 152A:373 (Borst A)
–, – L-serine receptor in salmon 159:61 (Rehnberg BG, Schreck CB)
–, – responses of aquatic and terrestrial salamanders 158:479 (Arzt AH et al.)
–, – responses of goldfish to steroidal pheromone 160:305 (Sorensen PW et al.)
–, – sensitivity and discrimination of mixtures in honeybee 160:239 (Getz WM, Smith KB)
–, pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)
–, purinergic olfactory cells of crustaceans 155:341 (Derby CD et al.)
–, pyridine-sensitive units on crayfish walking leg 154:855 (Hatt H, Schmiedel-Jakob I)
–, repeated natural stimulation of mitral cells in goldfish olfactory bulb 158:563 (Schild D, Zippel HP)
–, responses of fly tarsal contact receptors to salt, sucrose and pheromone 154:143 (Bowdan E)
–, – of sea star to lactic acid, amino acids and acetylcholine 157:537 (Valentinčič T)
–, – of stick insect hygroreceptor 160:43 (Tichy H)
–, scent organogenesis and pheromone biosynthesis in a moth 157:569 (Boppré M, Schneider D)
–, sensitivity of fish facial nerve 157:705 (Kiyohari S et al.)
–, – of lobster aesthetasc hairs 158:59 (Spencer M)
–, sex pheromone-selective projection neurons in moth brain 160:553 (Christensen TA, Hildebrand JG)
–, stereospecificity of furanose site in fly sugar receptor 157:477 (Shimada I et al.)
–, stimuli in leech feeding behavior 159:391 (Elliott EJ)
–, tuning of primary taste neurons in lobster walking legs 155:593 (Johnson BR et al.)
–, variability in fly taste responses 157:211 (van der Molen JN et al.)
Chemoreception, see also olfaction, olfactory cells
Chemotactic behavior in the octopus 158:375 (Chase R, Wells MJ)
Cherax, antennal proprioceptors 157:363 (Sandeman DC)
–, diurnal changes in photoreceptor sensitivity 158:573 (Bryceson KP)
–, image quality in superposition eye 151A:367 (Bryceson KP, McIntyre P)
–, tactile localisation 157:607 (Zeil J et al.)
Chick, corneal accommodation 160:375 (Schaeffel F, Howland HC)
–, see also *Gallus*
Chicken, photopic spectral sensitivity of dorsal and ventral retina 160:151 (Wortel JF et al.)
–, sensory responses of geniculate ganglion 160:683 (Gentle MJ)
–, unmyelinated nerve fibres 157:383 (Hodgkiss JP)
Chipmunk see *Eutamias*
Chordotonal organ, giant interneurones in cockroach abdominal ganglion inhibited by – 153A:377 (Bernard J et al.)
Chorthippus, auditory neuron responses in freely moving – 158:689, 697 (Wolf H)
–, – pattern and direction processing 154:837 (Helversen D von)
–, processing of auditory directional information in CNS 158:363 (Ronacher B et al.)
–, spike synchronization of tympanic fibres 157:631 (Ronacher B, Römer H)
–, switching-off of an auditory interneuron 158:861 (Wolf H, Helversen O von)
Chromatic deprivation, synapse frequency in bee eye after – 151A:477 (Hertel H)
Chrysemys, renal phosphate transport 152B:117 (Laverty G)
–, ventilatory control 151B:145 (Glass ML et al.)
Cicada, see also *Magicicada*
Cicadas, sound production and muscle contraction kinetics 152A:183 (Young D, Josephson RK)
Cichlid fish, see *Haplochromis, Sarotherodon*
Cichlosoma, effect of rest deprivation on motor activity 157:817 (Tobler I, Borbély AA)
Cilia, calcium effects on mussel gill – 155:445, 457 (Stommel EW)
–, mechanoreceptive properties of *Paramecium* – 154:263 (Machemer-Röhnisch S, Machemer H), 273 (Machemer H, Machemer-Röhnisch S)
Ciliary motor responses, electrophysiological control of ctenophore – 158:311 (Moss AG, Tamm SL)
– reversal and Ca-concentration in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
Ciliata, see *Didinium, Paramecium, Stylonychia*
Circadian activity, colour changes as synchronizers 151A:359 (Nuboer JFW et al.)
– entrainment, light-sampling in rodent – 159:161 (DeCoursey PJ)
– organization in a lizard 152A:265 (Underwood H)
– – in *Aplysia* 153A:133 (Lickey ME et al.); 156:293 (Jordan WP et al.)
– – in pigeon 154:59 (Ebihara S et al.)
– – of hamster exposed to short day photoperiod 159:7 (Puchalski W, Lynch GR)
– oscillator in *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
– oscillators, multiple, in hamster 159:187 (Mrosovsky N, Hallonquist JD)
– pacemaker activity in a cockroach 152A:231 (Page TL)
– rhythm, components of split – in hamster 153A:123 (Lees JG et al.)
– system, optic-tract regeneration and internal coupling in cockroach – 153A:353 (Page TL)
– wake and activity onset timing in mouse 158:827 (Welsh DK et al.)
Circalunar reproduction rhythm, effect of artificial moonlight on polychaete – 159:569 (Franke H-D)
Circannual cycles, synchronization in ground squirrels 156:125 (Joy JE, Mrosovsky N)
– rhythm of food intake in a bird 156:429 (Bhatt D, Chandola A)
Clam, see *Solemya*
Coccinella, control of walking speed 156:395 (Zanker JM, Collett TS)
Cochlea, frequency-place map in bat – 157:671 (Vater M et al.), 687 (Kössl M, Vater M)
–, gross potentials recorded from skink – 154:719, 729 (Holmes RM, Johnstone BM)
–, microphonic potentials in bat – responding to vocalization 160:635 (Pietsch G, Schuller G)
Cochlear ganglion, activity patterns of units in starling – 157:161 (Manley GA et al.)
– –, modulation of unit activity 157:643 (Oeckinghaus H)
Cockroach, see *Leucophaea, Periplaneta*
Coelomocytes, volume regulation in blood worm 151B:133 (Costa CJ, Pierce SK)
Coenobita, substrate slope and orientation 154:511 (Dunham DW, Schöne H)
Cold hardiness in beetles 151B:225, 233 (Horwath KL, Duman JG)
– receptor, response characteristics of stick insect – 160:33 (Tichy H, Loftus R)
– receptors on foreleg tarsi of a tropical tick 155:187 (Hess E, Loftus R)
Coleoptera, see *Coccinella, Dendroides, Gyrinus, Ips, Popillia, Sitophilus, Speophyes, Tenebrio, Thanasimus, Trogoderma*
Colliculus, inferior, of house mouse 156:619, 637 (Ehret G, Moffat AJM)
–, –, responses of bat neurons to ultrasonic echoes from wing beating insects 155:121 (Schuller G)
–, –, responses of bat – to tones and FM signals 157:797 (O'Neill WE)
–, –, single unit responses in bat – 153A:67 (Bodenhamer RD, Pollak GD)
–, superior, auditory responses of neurons in FM bat – 154:408 (Jen PH et al.)
–, –, directional sensitivity of bat neurons 154:253 (Poussin C, Schlegel P)
Color effects, antagonistic, in bee vision 151A:441 (Menzel, R. Lieke E)
– stimuli, visual processing in butterfly 160:645 (Scherer C, Kolb G)
Colour vision and phototaxis in honeybee 157:311 (Menzel R, Greggers U)

– – in butterflies 155:529 (Horridge GA et al.)
– –, landmark learning in bees 159:69 (Cheng K et al.)
– –, temporal resolution of honeybee – 157:579 (Srinivasan M, Lehrer M)
Columba, see pigeon
Communication, acoustic, in electric fish 159:297 (Crawford JD et al.)
–, –, in poison-arrow frog 160:693 (Zimmermann E, Rahmann H)
–, by air vortex rings in crickets 160:79 (Heinzel H-G, Dambach M)
Compass direction, preferred, in pigeon homing 157:469 (Wiltschko R, Wiltschko R)
– movement, time-compensated, in a lizard 156:547 (Adler K, Phillips JB)
Compound eye, fluorescence in fly – 154:297 (Miller GV et al.)
– –, physiology of cricket – 155:289 (Labhart T et al.)
– –, spectral sensitivity of pigment migration in moth – 153A:59 (White RH et al.)
– –, visual pigments in water bug – 154:341 (Schwind R et al.)
Conditioning and retention in normal and mutant fruitfly 157:263 (Tully T, Quinn WG)
– of *Drosophila* clock mutants 151A:545 (Jackson FR et al.)
– to magnetic fields in honeybees 157:67 (Walker MM, Bitterman ME)
Cormura, echolocation calls 151A:515 (Barclay RMR)
Corneal accommodation in birds 160:375 (Schaeffel F, Howland HC)
Corpora allata, effect on development of locust flight motor pattern 155:129 (Kutsch W, Stevenson P)
Corydalus, neural control of ventilatory movements 153A:543 (Kinnamon SC, Kammer AE)
Coturnix, circadian rhythms of testosterone-dependent behaviors 158:17 (Wada M)
–, electrical gonadostimulation 154:583 (Ohta M et al.)
–, rhodopsin-like photopigment in brain photoreceptors 157:519 (Foster RG, Follett BK)
Courtship behavior, effects of biological rhythm mutations on *Drosophila* – 151A:545 (Jackson FR et al.)
– –, temperature effects on wasp – 155:233 (Assem J van den et al.)
Crab, see *Aniculus, Callinectes, Cancer, Carcinus, Cardisoma, Coenobita, Dardanus, Eriphia, Leptograpsus, Pachygrapsus, Paragrapsus, Portunus, Sesarma, Uca*
Crabs, distribution of optokinetic sensitivity over the eye 160:127 (Nalbach H-O, Nalbach G)
–, eyes, eye-stalks and visual world 159:801 (Zeil J et al.)
–, vibrational processing in CNS 157:91, 105 (Hall J)
Crawling, kinematic study of leech – 158:593 (Stern-Tomlinson W et al.)
Crayfish, see *Astacus, Austrapotamobius, Cherax, Orconectes, Pacifastacus, Procambarus*
Creatonotos, alkaloid regulation of organogenesis and biosynthesis 157:569 (Boppré M, Schneider D)
Cricket, see *Acheta, Gryllus, Phaeophilacris, Teleogryllus*
Crowing, circadian rhythms of – in quails 158:17 (Wads M)
Crustacea, amine modulation of *Homarus* motor activity 156:875 (Harris-Warrick RM)
–, amino acid stimulation of *Austrapotamobius* leg receptors 155:219 (Hatt H)
–, AMP as chemoattractant for *Palaemonetes* 153A:47 (Carr WES, Thompson HW)
–, antennal feathered hairs in *Astacus* 154:45 (Bender M et al.)
–, – proprioceptors in *Cherax* 157:363 (Sandeman DC)
–, – responses to leg movements in *Palinurus* 155:351 (Neil DM et al.)
–, ATP-sensitive olfactory cells in *Panulirus* 158:331 (Carr WES et al.)
–, bimodal neuron on *Austrapotamobius* walking legs 159:611 (Hatt H)
–, cardiac ganglion of *Homarus* 151A:329 (Tazaki K, Cooke IM)
–, – ganglion of *Portunus* 151A:311 (Tazaki K, Cooke IM)
–, cardio-regulator nerves of hermit crabs 154:871; 155:313 (Yazawa T, Kuwasawa K)
–, chemical sensitivity of *Panulirus* aesthetasc hairs 158:59 (Spencer M)
–, chemoreceptors in *Hemilepistus* 152A:219 (Seelinger G)
–, closer apodeme tension receptors in *Callinectes* 157:355 (Hartman HB)
–, coordination of *Pacifastacus* swimmeret rhythms 158:215 (Paul DH, Mulloney B)
–, dichroism and polarization sensitivity in *Leptograpsus* 154:597 (Doujak FE)
–, distribution of optokinetic sensitivity over crab eyes 160:127 (Nalbach H-O, Nalbach G)
–, diurnal changes in *Cherax* photoreceptor sensitivity 158:573 (Bryceson KP)
–, driver potentials in *Homarus* cardiac ganglion neurons 157:845 (Berlind A)
–, escape behavior of *Procambarus* 153A:3 (Reichert H, Wine JJ)
–, excitatory glutamate-activated channel in *Austrapotamobius* 159:579 (Franke Ch et al.)
–, – miniature currents in *Austrapotamobius* muscle 159:13 (Finger W, Martin C)
–, eyes, eye-stalks and visual world of crabs 159:801 (Zeil J et al.)
–, GABA activated inhibitory chloride channel in *Austrapotamobius* muscle 159:591 (Franke Ch et al.)
–, image quality in *Cherax* superposition eye 151A:367 (Bryceson KP, McIntyre P)
–, inheritance of solar direction finding in *Talitrus* 151:435 (Pardi L, Scapini F); 156:729 (Scapini F et al.); 157:433 (Scapini F, Buiatti M)
–, inhibitory limb innervation in brachyurans 156:305 (Wiens TJ, Rathmayer W)
–, innervation of *Cancer* pyloric region 159:227 (Hooper SL et al.)
–, interaction of *Procambarus* motoneurons 152A:335 (Nagayama T et al.)
–, interrelation between *Procambarus* posture and locomotion 157:509 (Tatsumi H et al.)
–, lateral inhibition of *Procambarus* local interneuron 157:499 (Krenz WD, Reichert H)
–, leg muscle innervation in crabs 158:665 (Rathmayer W, Bevengut M)
–, local inhibititor of motor giant neurons in *Procambarus* 158:69 (Kirk MD et al.)
–, – interneurons in *Pacifastacus* swimmeret system 156:489 (Paul DH, Mulloney B)
–, – interneurons in *Procambarus* ganglion 151A:261 (Reichert H et al.)
–, – non-spiking interneurons in *Procambarus* 154:499 (Nagayama T et al.)
–, motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
–, – neurons in *Homarus* swimmeret system 160:55 (Cattaert D, Clarac F)
–, – system interactions in *Procambarus* 157:547 (Takahata M, Hisada M)
–, muscle fiber properties in *Eriphia* 152A:411 (Rathmayer W, Erxleben C)
–, myogenicity in *Palaemon* pyloric rhythm 158:489 (Meyrand P, Moulins M)
–, nervous regulation in the heart of *Bathynomus* 154:883 (Kihara A, Kuwasawa K)
–, neural control of *Bathynomus* cardio-arterial valves 157:529 (Kihara A et al.)
–, – control of *Procambarus* postural behavior 160:169 (Moore D, Larimer JL)
–, – control of ventilation in *Carcinus* 155:397 (DiCaprio RA, Fourtner CR)
–, neuromuscular effects of claw immobilization in *Procambarus* 157:461 (Pahapill PA et al.)
–, neuronal interactions in *Procambarus* postural control system 156:861 (Jellies J, Larimer JL)
–, nonspiking elastic strand receptor in *Carcinus* 160:599 (Cannone AJ)
–, – local interneurons in *Pacifastacus* 156:763 (Waldrop B, Glantz R)
–, optical parameters of euphausiid eyes 154:307 (Hiller-Adams P, Case JF)
–, orientation to slope in *Coenobita* 154:511 (Dunham DW, Schöne H)
–, oscillatory command input to *Homarus* gastric motor output 154:473 (Robertson RM, Moulins M)
–, peptides in *Cardisoma* sinus gland 153B:191 (Stuenkel EL),207 (Newcomb RW)

Crustacea, peripheral inhibition of *Uca* vibration-sensitive units 154:49 (Aicher B, Tautz J)
–, photoreceptor function in *Procambarus* 158:35 (Cummins DR, Goldsmith TH)
–, polarization sensitivity in *Procambarus* retina 156:315 (Sabra R, Glantz RM)
–, postural interneurons in *Homarus* abdominal nervous system 158:259, 273, 281 (Jones KA, Page CH)
–, presynaptic inhibition in *Procambarus* brain 156:477 (Glantz RM et al.), 605 (Wang-Bennett LT, Glantz RM)
–, – inhibition of *Procambarus* afferents 153A:443 (Fricke RA, Kennedy D)
–, properties of *Alpheus* muscle fibers 155:323 (Mellon DeF Jr)
–, purinergic olfactory cells of *Panulirus* 155:341 (Derby CD et al.)
–, pyloric pattern generator in *Jasus* 153A:17 (Rezer E, Moulins M)
–, pyrethroid-induced activity in crayfish stretch receptor neuron 159:43 (Ruigt GSF et al.)
–, pyridine-sensitive units on *Austrapotamobius* leg 154:855 (Hatt H, Schmiedel-Jakob I)
–, retinula cell changes upon adaptation in *Procambarus* 159:667 (Frixione E, Porter RM)
–, – cell polarisation sensitivity 153A:435 (Stowe S)
–, rhabdom breakdown in *Leptograpsus* eye 153A:365 (Stowe S)
–, spectral sensitivity classes in *Paragrapsus* visual interneurons 157:235 (Knight D, Leggett LMW)
–, – sensitivity of *Daphnia* eye movements 156:135 (Consi TR, Macagno ER)
–, stomatogastric nervous system of *Squilla* 159:521 (Tazaki K et al.)
–, stomatogastric IV neurons in *Panulirus* brain 154:27 (Claiborne BJ, Selverston AI)
–, swimmeret system responses to tactile stimulation in *Homarus* 158:225 (Kotak VC, Page CH)
–, tactile localisation in *Cherax* 157:607 (Zeil J et al.)
–, temperature and neuromuscular transmission in *Pachygrapsus* 153A:455 (Stephens PJ, Atwood HL)
–, – dependence of crayfish chemo-reception 152A:395, 405 (Hatt H)
–, tidal rhythm of larval release in *Sesarma* 159:21 (Saigusa M)
–, tuning of *Homarus* taste receptors 155:593 (Johnson BR et al.)
–, vibrational processing in crab central nervous system 157:91, 105 (Hall J)
–, visual pigment of *Squilla* 156:679 (Cronin TW)
–, visualization of crayfish neurons 158:625 (Reichert H, Krenz WD)
–, water relations in terrestrial idopods 151B:155 (Quinlan MC, Hadley NF)
–, – vibration frequency coding by *Probambarus* interneurons 158:751 (Plummer MR et al.)
–, Y-organ and cephalic gland in *Orconectes* molt 152B:91 (Jegla TC et al.)
Cs, effects on labyrinthine sensory neurons 155:739 (Valli P et al.)
Ctenophora, ciliary motor responses in *Pleurobrachia* 158:311 (Moss AG, Tamm SL)
Culiseta, circadian and circa-bi-dian flight rhythms 155:1 (Clopton JR)
Cuniculina, afferent control of walking 158:345, 351 (Bässler U)
Cupiennius, vibration sensitive neurons in CNS 160:467 (Speck-Hergenröder J, Barth FG)
–, vibratory stimuli and behavior 152A:347, 361 (Hergenröder R, Barth FG)
Cyclostomata, catecholamines of *Petromyzon* 152B:35 (Dashow L, Epple A)
–, central pattern generator for locomotion in *Ichthyomyzon* 160:181 (Cohen AH)
–, electroreceptors in lampreys 152A:209 (Bodznik D, Preston DG)
–, non-ampullary electroreceptors 158:9 (Ronan MC, Bodznick D)
–, photoreception in *Lampetra* pineal organ 159:1 (Tamotsu S, Morita Y)
–, respiratory bursts in *Ichthyomyzon* medulla 157:303 (Rovainen CM)
–, – motoneurons in *Ichthyomyzon* brain 157:291 (Thompson KJ)
–, – pattern generation in *Lampetra* 158:91 (Russell DF)
–, sensory dorsal cells in *Ichthyomyzon* brain 156:181 (Rovainen CM, Yan Q)
–, visual cells and pigments of *Lampetra* 154:279 (Govardovskii VI, Lychakov DV)
Cycnia, listening for bats 154:249 (Fullard JH)
Cyprinus, central auditory pathways 156:267 (Echteler SM)
–, gustatory specificity 153A:299 (Marui T et al.)
–, olfactory bulb potentials 152A:319 (Satou M et al.)
–, spherical aberration of lens 154:415 (Kreuzer RO, Sivak JG)
Cyrtodiopsis, visual performance 151A:407 (Burkhardt D, de la Motte I)

D

Dace, see *Tribolodon*
Dacelo, visual optics 160:137 (Moroney MK, Pettigrew JD)
Dance orientation in Asian honey bee 157:183 (Dyer FC)
Daphnia, spectral sensitivity of eye movements 156:135 (Consi TR, Macagno ER)
Dardanus, cardio-regulator nerves 154:871; 155:313 (Yazawa T, Kuwasawa K)
Dealation, effect of pheromone disinhibition in queen fire ants 153A:467 (Fletcher DJC, Blum MS)
Decerebration, effect on stick insect walking 158:345 (Bässler U)
Decticus, conduction block in neuronal control of muscle 154:431 (Theophilidis G)
Dehydration, effects on metabolism in dik-dik antelope 152B:23 (Kamau JMZ, Maloiy GMO)
Deilephila, ultraviolet and blue induced pigment migration in retina 159:353 (Hamdorf K et al.)
Dendroides, cold hardiness 151B:225, 233 (Horwath KL, Duman JG)
Deoxyglucose mapping of brain activity in toad 156:433 (Finkenstädt T et al.)
– – of nervous activity in fly brain 155:471 (Buchner E et al.); 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
– study of avian auditory field L 156:1 (Müller SC, Scheich H)
Depressor receptor in shore crab 160:599 (Cannone AJ)
Desmodus, recognition of spatial parameters by echolocation 155:67 (Joermann G)
Desoxyglucose activity in frog brain by acoustic stimulation 160:693 (Zimmermann E, Rahmann H)
Development of vestibulo-ocular reflex in toads 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
Deviation detector neurons in locusts 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
Diaminopyridine, effect on crayfish neuromuscular junctions 159:13 (Finger W, Martin C)
Diapause, light-sensitive phase in photoperiodic termination of butterfly – 155:161 (Brunnarius J, Dumortier B)
Didinium, membrane currents 158:111 (Pape H-C, Machemer H)
Diencephalon, two electroreceptive nuclei in thornback ray 153A:331 (Schweitzer J)
Digestion in the koala 152B:43 (Cork SJ, Warner ACI), 131 (Cork SJ, Hume ID); 153B:181 (Cork SJ et al.)
Dinoflagellate, see *Gonyaulax*
Diptera, see *Aedes, Boettcherisca, Calliphora, Culiseta, Cyrtodiopsis, Drosophila, Lucilia, Musca, Phormia, Rhagoletis, Sarcophaga*
Distance discrimination in frog prey orienting 156:775 (Grobstein P et al.)
Diuresis, post-bloodmeal, in the mosquito 153B:257 (Williams JC et al.)
Diving, aerobic limits of Wedell seals 151B:171 (Kooyman GL et al.)
Dobsonfly, see *Corydalus*
Dog, antiduretic hormone and osmoregulation 151B:241 (Gray DA, Simon E)
Dolabella, branchial ganglion functions 156:35 (Kurokowa M, Kuwasawa K)
Dopamine, role in honeybee antennal lobes 160:359 (Macmillan CS, Mercer AR)
Doppler-shift compensation in hipposiderid bats 155:559 (Habersetzer J et al.)
Dragonfly, see Odonata
Driver potentials in crustacean cardiac ganglion 151A:311, 329 (Tazaki K, Cooke IM)

Dromaius, water balance during dehydration 153B:235 (Dawson TJ et al.)
Drosophila, behavioral and molecular defects in a memory mutant 155:569 (Dudai Y et al.)
–, centrophobism 156:319, 329 (Götz KG, Biesinger R)
–, classical conditioning 157:263 (Tully T, Quinn WG)
–, computation of olfactory signals 152A:373 (Borst A)
–, conditioning of clock mutants 151A:545 (Jackson FR et al.)
–, ERG transients 159:655 (Coombe PE)
–, fixation behavior 155:661 (Coombe PE)
–, fluorescence in compound eye 154:297 (Miller GV et al.)
–, geographical variation in time measurement 159:123 (Lankinen P)
–, movement-specific metabolic mapping in brain 155:471 (Buchner E et al.); 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
–, mutant sensitive to developmental temperature 151A:483 (Minke B)
–, neural pathways 156:13 (Benshalom G, Dagan D)
Duck, antidiuretic hormone and osmoregulation 151B:241 (Gray DA, Simon E)
Dusk orientation in migrating birds 159:107 (Able KP, Cherry JD)

E

Ear, inner, physiological properties of bat – 157:587 (Henson OW et al.)
Ecdysis, neural organization of moth peptide-activated – 155:407, 423 (Weeks JC, Truman JW)
–, preparatory behavior rhythm in a moth 155:521 (Truman JW)
Ecdysteroid, effect on circadian system timing hemipteran ecdysis 157:699 (Ampleford EJ)
Ecdysteroid-triggered circadian rhythm in a moth 155:521 (Truman JW)
Echinodermata, chemoreception in *Marthasterias* 157:537 (Valentinčič T)
Echolocation, bat hunting for insects in flycatcher-style 157:39 (Schnitzler H-U et al.)
– calls of emballonurid bats 151A:515 (Barclay RMR)
–, effect of clutter interference 152A:447 (McCarty JK, Jen PH-S)
–, evolution in bats 154:347 (Simmons JA et al.)
–, fluttering target detection by bats 159:765 (Emde G von der, Schnitzler H-U)
–, foraging and Doppler-compensation in bats 155:559 (Habersetzer J et al.)
–, frequency tracking and Doppler shift compensation in bats 156:471 (Roverud RC, Grinnell AD)
–, horizontal angle discrimination by a bat 153A:321 (Simmons JA et al.)
– in bats 152A:421 (Vogler B, Neuweiler G)
– in mouse-tailed bat 154:347 (Simmons JA et al.)
–, moth clicks and bat – 156:831 (Surlykke A, Miller LA)
–, movement detection in CF/FM bats 159:403 (Link A et al.)
– of moving targets by a fish-catching bat 155:75 (Wenstrup JJ, Suthers RA)
–, oscillating target detection by a bat 153A:385 (Schnitzler H-U, Flieger E)
–, prey detection by false vampire bats 160:509 (Marimuthu G, Neuweiler G)
–, recognition of spatial parameters by a bat 155:67 (Joermann G)
–, signal processing for distance information in bats 156:457 (Roverud RC, Grinnell AD)
–,– requirements for detection and range discrimination in bats 156:447 (Roverud RC, Grinnell AD)
– sounds of Japanese horseshoe bat 156:185 (Taniguchi I)
– – of oil bird 156:243 (Suthers RA, Hector DH)
–, target detection in noise by serotine bats 159:559 (Troest N, Møhl B)
–,– discrimination by flying bats 152A:275 (Habersetzer J, Vogler B)
Eclosion rhythm, geographical variation in *Drosophila* – 159:123 (Lankinen P)
Eel, see *Anguilla*
Efferent activity in octopus statocyst nerves 158:125 (Williamson R)
– impulses in afferents from mormyrid electroreceptors 157:15 (Slesinger P, Bell CC)
Egretta, prey capture under water 160:517 (Katzir G, Intrator N)
Eigenmannia, gating of sensory information 159:311 (Heiligenberg W, Rose G)
–, jamming avoidance response processing in the brain 154:895 (Bastian J, Yuthas J)
–, neural coding of EOD difference frequencies 158:613 (Rose G, Heiligenberg W)
–,– mechanisms for electrolocation 160:491 (Rose G et al.)
–, phase and amplitude sensitivity of torus semicircularis 159:813 (Rose G, Heiligenberg W)
Elaphe, cardiorespiratory responses 152B:29 (Lillywhite HB et al.)
Elasmobranchs, see *Cephaloscyllium, Ginglymostoma, Negaprion, Platyrhinoidis*
Electric fish, see *Apteronotus, Brienomyrus, Eigenmannia, Gnathonemus, Gymnotus, Hypopomus*, mormyrids, *Pollimyrus, Sternopygus*
Electric organ, androgen-binding in fish – 159:535 (Bass AH et al.)
– – discharge (EOD), effect of steroids on – 153A:29; 154:659 (Meyer JH)
– – discharge, hormonal control of sex differences in mormyrid fishes 156:587 (Bass AH, Hopkins CD)
– – discharge, hormone-induced and maturational changes in electric fish – 160:385 (Meyer JH et al.)
– – discharge, neural coding of difference frequencies in fish midbrain 158:613 (Rose G, Heiligenberg W)
– – discharge, sexually dimorphic signals in a gymnotid fish 156:511 (Hagedorn M, Carr C)
– –, miniature excitatory junction potentials and synaptic vesicle in ray electrocyte 160:331 (Kriebel ME et al.)
– properties of ciliate membrane 158:111 (Pape H-C, Machemer H)
Electrical coupling between blowfly photoreceptors 160:501 (Smakman JGJ, Stavenga DG)
Electroplaque, MEJPs and synaptic vesicle in ray – 160:331 (Kriebel ME et al.)
Electroreception, androgen effect on fish receptor tuning 158:301 (Keller CH et al.)
–, control of jamming avoidance response in fish brain 154:895 (Bastian J, Yuthas J)
–, detection of DC electric dipoles by a shark 155:681 (Johnson CS et al.)
–, efferent impulses in primary afferents from mormyrid receptors 157:15 (Slesinger P, Bell CC)
–, evolution of jamming avoidance response 160:491 (Rose G et al.)
–, functional organization of elasmobranch midbrain 158:43 (Schweitzer J)
–, gain control in fish lateral line lobe 158:505 (Bastian J)
–, hormone-induced and maturational changes in fish receptor tuning 160:385 (Meyer JH et al.)
–, in lampreys 152A:209 (Bodznik D, Preston DG)
–, influences of steroids upon fish – 154:625 (Meyer JH et al.)
–, neural coding of difference frequencies in fish midbrain 158:613 (Rose G, Heiligenberg W)
–, noise cancellation in thornback ray 155:103 (Montgomery JC)
–, non-ampullary receptors in adult lampreys 158:9 (Ronan MC, Bodznick D)
–, novelty detection in fish brain 159:191 (Grau HJ, Bastian J)
–, phase and amplitude computations in fish midbrain 159:311 (Heiligenberg W, Rose G)
–, phase and amplitude sensitivity of fish torus semicircularis 159:813 (Rose G, Heiligenberg W)
–, plasticity of receptor tuning in *Sternopygus* 153A:477 (Zakon HH, Meyer JH)
–, sensory gating by corollary discharge in fish 151A:401 (Meyer JH, Bell CC)
–, shifts in frequency tuning of receptors in androgen-treated mormyrids 155:713 (Bass AH, Hopkins CD)
–, two electroreceptive nuclei in elasmobranch diencephalon 153A:331 (Schweitzer J)
–, two types of neurons in fish electrosensory lateral line lobe 154:199 (Saunders J, Bastian J)

Electroreceptive units in axolotl lateral line 154:33 (Münz H et al.)
Electroretinogram, large monopolar cells responsible for – transients in fly retina 159:665 (Coombe PE)
Eleutherodactylus, call oscillator 156:223 (Zelick R, Narins PM)
–, intensity discrimination and call timing 153A:403 (Zelick RD, Narins PM)
Empyreuma, auditory receptors 154:441 (Pérez M, Coro F)
–, intensity coding by auditory receptors 154:287 (Coro F, Pérez M)
Emu, see *Dromaius*
Energetics, locomotory, of the Gila Monster 151B:119 (John-Alder HB et al.)
EOD, see electric organ discharge
Ephestia, charge of screening pigment granules 157:667 (Weyrauther E, Seitz G)
–, triggering of pigment migration 159:55 (Weyrauther E)
Eptesicus, directional sensitivity of superior colliculus neurons 154:253 (Poussin C, Schlegel P)
–, horizontal angle discrimination 153A:321 (Simmons JA et al.)
–, pectoralis muscle during hibernation 152B:97, 137 (Yacoe ME)
–, superior collicular auditory neurons 154:407 (Jen PH et al.)
–, target detection in noise 159:559 (Troest N, Møhl B)
–, – detection 152A:447 (McCarty JK, Jen PH-S)
ERG flicker photometry in ground squirrels 156:503 (Jacobs GH et al.)
Eriphia, inhibitory limb innervation 156:305 (Wiens TJ, Rathmayer W)
–, leg muscle innervation 158:665 (Rathmayer W, Bevengut M)
–, neuromuscular transmission in muscle fibers 152A:411 (Rathmayer W, Erxleben C)
Escape behavior, giant and non-giant systems in crayfish – 153A:3 (Reichert H, Wine JJ)
– turning behavior of cockroach 160:571 (Comer CM, Dowd JP)
Esox, spherical aberration of lens 154:415 (Kreuzer RO, Sivak JG)
Ether narcosis, effect on orientation in *Drosophila* 156:319, 329 (Götz KG, Biesinger R)
Eucalyptus, digestion by the koala 152B:43 (Cork SJ, Warner ACI), 152B:131 (Cork SJ, Hume ID), 153B:181 (Cork SJ et al.)
Eugerres, electrophysiology of nucleus isthmi 152A:545 (Williams B et al.)
Euphausiids, optical parameters of eyes 154:307 (Hiller-Adams P, Case JF)
Eurypelma, hemolymph composition 152B:73 (Schartau W, Leidescher T)
Eurythermality of fish myofibrils 153B:167 (Sidell BD et al.)
Eutamias, SCN lesions and circadian rhythms 155:745 (Sato T, Kawamura H)
Evolution of echolocation in bats 154:347 (Simmons JA et al.)
Exoskeleton, strains in spider – 157:115 (Blickhan R, Barth FG)
Eye, accommodation, corneal curvature and refractive state in owls 151A:277 (Murphy CJ, Howland HC)
–, circadian pacemaker system in snail – 155:365 (Block GD et al.), 379 (McMahon DG et al.), 387 (Block GD, McMahon DG)
–, – period in *Aplysia* – 151A:253 (Woolum JC, Strumwasser F)
–, compound, maps of acute zones of fly – 156:525 (Land MF, Eckert H)
–, –, see also compound eye
–, –, structure of ommatidium in dragonfly ventral – 151A:285 (Armett-Kibel C, Meinertzhagen IA)
–, corneal accommodation in birds 160:375 (Schaeffel F, Howland HC)
–, dawn breakdown of crab rhabdoms 153A:365 (Stowe S)
–, motor dynamics in sharks 158:723 (Paulin MG, Montgomery JC)
– movement amplitude in starlings 159:545 (Martin GR)
– movements in an African cichlid fish 156:199 (Fernald RD)
– – in antarctic fish 154:241 (Montgomery JC, Macdonald JA)
– –, spectral sensitivity of daphnid – 156:135 (Consi TR, Macagno ER)
– –, threshold for rabbit vestibular nystagmus 160:585 (Lau CGY, Honrubia V)
–, optokinetic sensitivity of crab – 160:127 (Nalbach H-O, Nalbach G)
–, patterns of lens pigmentation in deep-sea fish – 159:791 (McFall-Ngai M et al.)
–, position signals in frog abducens motoneurons 158:179 (Dieringer N, Precht W)
–, role in pigeon circadian organization 154:59 (Ebihara S et al.)
–, spherical aberration of fish lens 154:415 (Kreuzer RO, Sivak JG)
–, structure and optics of snail – 152A:435 (Hamilton PV et al.)
–, superposition, charge of screening pigment granules in moth – 157:667 (Weyrauther E, Seitz G)
–, –, diurnal changes of sensitivity 158:573 (Bryceson KP)
–, –, image quality in crayfish – 151A:367 (Bryceson KP, McIntyre P)
–, –, resolving power 154:515 (Land MF)
–, triggering of screening pigment migration in moth – 159:55 (Weyrauther E)
– velocity, functional organization in frog 158:179 (Dieringer N, Precht W)
–, visual optics of kingfisher – 160:137 (Moroney MK, Pettigrew JD)
–, – pigments and oil droplets in penguin – 156:71 (Bowmaker JK, Martin GR)
Eye-bar, control of cichlid social signal 160:89, 99 (Muske LE, Fernald RD)
Eyes, optical parameters of euphausiid – 154:307 (Hiller-Adams P, Case JF)
Eye-stalks of semi-terrestrial crabs 159:801 (Zeil J et al.)

F

Facial nerve, sensory responses from chicken geniculate ganglion 160:683 (Gentle MJ)
Falconidae, sound coding in auditory midbrain 157:149 (Calford MB et al.)
Feeding behavior of the leech 154:449 (Dickinson MH, Lent CM), 457 (Lent CM, Dickinson MH)
–, chemosensory stimuli in leech – 159:391 (Elliott EJ)
–, coordination of dual inhibitory system regulating fly –158:713 (Bowdan E, Dethier VG)
–, effect on slug heart activity 156:539 (Grega DS, Prior DJ)
– movements in a gastropod 155:209 (Susswein AJ et al.)
Feeding-pecking centre in pigeon brain, sensory inputs to – 159:33 (Schall U, Delius JD)
Fenfluthrin, repetitive activity in crayfish stretch receptor neuron induced by – 159:43 (Ruigt GSF et al.)
Finch, see *Carpodacus*
Fish, see Pisces
Fixation behavior, role of retinula cell types in fly – 155:661 (Coombe PE)
Flatworm, see *Notoplana*
Fleshfly, see *Boettcherisca*
Flight, control of hindlimb posture in locust – 159:849 (Arbas EA)
–, proprioception in locust – 156:93, 103, 281 (Möhl B)
– initiation, coupling to jump in locusts 158:81 (Pearson KG et al.)
– maintenance mechanism in cockroach 155:697 (Yagodin SV, Kovbasa SI)
– motoneurons, synaptic input to locust – 154:745 (Hedwig B, Pearson KG)
– motor pattern, endocrine effects on development of locust – 155:129 (Kutsch W, Stevenson P)
– muscle, mechanical power output of locust – 160:413 (Mizisin AP, Josephson RK)
– muscles, auditory input to motor neurons of moth – 160:23 (Madsen BM, Miller LA)
–, phonotaxis in crickets during – 159:413, 441, (Nolen TG, Hoy RR)
– rhythms of the mosquito 155:1 (Clopton JR)
–, steering, motor output during locust – 158:653 (Thüring DA)
– system, auditory input to locust – 156:79 (Boyan GS)
– –, interneurons in cricket – 160:431 (Robertson RM)
– –, motor patterns in locoust intact and deafferented – 160:259 (Pearson KG, Wolf H), 269 (Wolf H, Pearson KG)
Fluorescence in fly compound eye 154:297 (Miller GV et al.)
Fly, see Diptera
Folate binding and chemoreception in *Paramecium* 155:113 (Schulz S et al.)

Folate-induced membrane hyperpolarization in *Paramecium* 160:525 (Preston RR, Van Houten JL)
Food intake, circannual rhythm in a bird 156:429 (Bhatt D, Chandola A)
Food-aversion to amino acid deficient diets, learning by slugs 159:281 (Delaney K, Gelperin A)
Foreleg amputation, unilateral, effect on central auditory neurons in crickets 158:291 (Schildberger K et al.)
Fourier Interferometric Stimulation (FIS), spectral sensitivity of insects studied with – 158:669 (Paul R et al.); 160:247 (Steiner A et al.)
Frequency selectivity in treefrog hearing 159:257 (Moss CF, Simmons AM)
Frog, see *Hyperolius, Phyllobates, Rana,* treefrog, *Xenopus*
Fugu, mechanical sensitivity of facial nerve 157:705 (Kiyohari S et al.)
Fundulus, eurythermality of myofibrils 153B:167 (Sidell BD et al.)
Furanose site, stereospecificity of – in fly sugar receptor 157:477 (Shimada I et al.)

G

GABA activated inhibitory chloride channels in crayfish muscles 159:591 (Franke Ch et al.)
GABAergic action in locust ocellus 157:779 (Ammermüller J, Weiler R)
– activities in locust CNS 157:343 (Breer H, Heilgenberg H)
– neurons in fly visual system 159:241 (Datum K-H et al.)
Galleria, sound production 159:751 (Spangler HG)
Gallus, brain temperature regulation 153B:241 (Midtgård U et al.)
–, oscillators in pineal gland 154:435 (Takahashi JS, Menaker M)
–, see also chick, chicken
Ganglia, monosynaptic connection between nociceptive and Nut cell in leech – 156:65 (Johansen J, Kleinhaus AL)
Ganglion, branchial, function in opisthobranchs 156:35 (Kurokawa M, Kuwasawa K)
– cells, spectral input to – in shark retina 156:579 (Cohen IL, Gruber SH)
–, cochlear, activity patterns of units in starling – 157:161 (Manley GA et al.)
–, metathoracic, auditory interneurons in locust – 155:249 (Römer H, Marquart V)
Gastropods, see *Navanax, Pleurobranchaea*
Gaze, stabilization in frog and turtle 153A:495 (Dieringer N et al.)
Genetic analysis of *Drosophila* neural pathways 156:13 (Benshalom G, Dagan D)
Geniculate ganglion, sensory responses from chicken – 160:683 (Gentle MJ)
Gerbil, see *Meriones*
Giant fibre pathway in flies 158:529 (Bacon JP, Strausfeld NJ)
– interneuron pathways in cockroach 159:639 (Ritzmann RE, Pollack AJ)
Gila Monster, see *Heloderma*
Ginglymostoma, detection of DC electric dipoles 155:681 (Johnson CS et al.)
Glaucomys, light-sampling in photoentrainment 159:161 (DeCoursey PJ)
Glucose, effects of catecholamines in sea lamprey 152B:35 (Dashow L, Epple A)
– metabolism in harbor seal 153B:275 (Davis RW)
– transport in marine fish intestine 152B:79 (Ferraris RP, Ahearn GA)
–, utilization in toad telencephalon 158:457 (Finkenstädt T et al.)
Glutamate-activated excitatory channel currents in crayfish muscle 159:579 (Franke Ch et al.)
– – inhibitory channel in crayfish muscle 159:591 (Franke Ch et al.)
Glutamate dehydrogenase isozymes from a Japanese beetle 151B:199 (Male KB, Storey KB)
Glutamic acid decarboxylase in fly visual system 159:241 (Datum K-H et al.)
Glycera, volume regulation in red coelomocytes 151B:133 (Costa CJ, Pierce SK)
Gnathonemus, auditory sensitivity 155:753 (McCormick CA, Popper AN)
–, efferent impulses in primary electroreceptor afferents 157:15 (Slesinger P, Bell CC)
–, sensory gating by corollary discharge 151A:401 (Meyer JH, Bell CC)
Goldfish, see *Carassius*
Gonadal responses to electrical stimulation of hypothalamus 154:583 (Ohta M et al.)
– role in slug reproductive maturation 158:151 (McCrone EJ, Sokolove PG)
Gonyaulax, circadian rhythm in RNA 151B:207 (Walz B et al.)
Grasshopper, see *Chorthippus, Omocestus*
Gravity, influence on weevil orientation 159:377 (Wendler G, Scharstein H)
–, orientation guide during spider web-construction 159:275 (Vollrath F)
Ground squirrel, see *Spermophilus*
Gryllus, auditory behavior 155:725 (Huber F et al.)
–, – directionality 153A:523 (Boyd P, Lewis B)
–, central auditory neurons after foreleg amputation 158:291 (Schildberger K et al.)
–, choice and non-choice paradigms in phonotaxis 157:279 (Doherty JA)
–, phonotaxis 152A:257 (Schmitz B et al.); 156:165 (Schmitz B)
–, physiology and tonotopy of auditory receptors 159:457 (Oldfield BP et al.)
–, – of compound eye 155:289 (Labhart T et al.)
–, range fractionation in cercal system 155:485, 495 (Shimozawa T, Kanou M)
–, responses of abdominal interneurons to low-frequency sound 155:507 (Kämper G)
–, song coding 154:423 (Boyd P et al.)
–, steering responses during flight 159:423, 441 (Nolen TG, Hoy RR)
–, temporal selectivity of auditory neurons 155:171 (Schildberger K)
–, thresholds of cercal interneurons 154:357 (Kanou M, Shimozawa T)
–, trade-off phenomena in phonotaxis 156:787 (Doherty JA)
–, tympanal membrane motion 151A:397 (Kleindienst H-U et al.)
Guinea pig, melatonin in hippocampal slices 157:23 (Zeise ML, Semm P)
– –, Purkinje cell responses to pineal indoles 154:675 (Semm P, Vollrath L)
Gustatory intensity discrimination 155:263 (Maes FW), 271 (Maes FW, Erickson RP)
– responses to amino acids of trout palate 153A:423 (Marui T et al.)
– sensillum, directional probosics extension to stimulation of blowfly – 160:367 (Yetman S, Pollack GS)
– specificity in the carp 153A:299 (Marui T et al.)
Gut-purge rhythm, circadian clock controlling moth – 155:639 (Mizoguchi A, Ishizaki H)
Gymnothorax, intestinal glucose transport 152B:79 (Ferraris RP, Ahearn GA)
Gymnotus, neural correlates of novelty detection 159:191 (Grau HJ, Bastian J)
Gyrinus, control of chasing behavior 158:405 (Bendele H)

H

Habitat, influence on optokinetic sensitivity of crab eyes 160:127 (Nalbach H-O, Nalbach G)
Haementeria, action potentials in neurons 157:491 (Johansen J, Kleinhaus AL)
Haemoglobin, adrenergic regulation of trout – oxygen affinity 152B:67 (Nikinmaa M)
Haemolymph, neurodepressing factor in stick insect – 152A:283 (Finlayson LH et al.)
Hair cells, calcium permeability of apical membrane in eel neuromast – 158:681 (Baumann M, Roth A)
Hairs, aesthetasc, innervation and chemical sensitivity of lobster – 158:59 (Spencer M)
–, antennal feathered, of crayfish 154:45 (Bender M et al.)
–, filiform, range fractionation in cricket cercal system 155:485, 495 (Shimozawa T, Kanou M)
Halcyon, visual optics 160:137 (Moroney MK, Pettigrew JD)
Hamster, see *Mesocricetus, Phodopus*
Hapigia, external auditory structures 155:625 (Fullard JH)
Haplochromis, control of a social signal 160:89, 99 (Muske LE, Fernald RD)
–, eye movements 156:199 (Fernald RD)
–, spectral sensitivity 157:247 (Allen EE, Fernald RD)
Hearing, acoustic communication in tree frogs 155:577 (Wilczynski W et al.), 585 (Brenowitz EA et al.)

Hearing, activity patterns of starling cochlear ganglion units 157:161 (Manley GA et al.)
–, audiograms of South Indian bats 154:133 (Neuweiler G et al.)
–, auditory habituation in bullfrog 151A:423 (Megela AL, Capranica RR)
–,– interneurones in locust metathoracic ganglion 155:249 (Römer H, Marquart V)
–,– pattern and direction processing in a grasshopper 154:837 (Helversen D von)
–,– receptor response in moths 154:441; 156:689; 159:115 (Pérez M, Coro F)
–,– resolution in azimuth by tits 158:383 (Klump GM et al.)
–,– response of catfish saccular neurons 155:615 (Moeng RS et al.)
–,– responses of bat superior collicular neurons 154:407 (Jen PH et al.)
–,– sensitivity of fish-catching bat 155:91 (Wenstrup JJ)
–,– sensitivity of the elephant nose fish 155:753 (McCormick CA, Popper AN)
–, central projections of tettigoniid auditory fibers 151A:389 (Oldfied BP)
–, characteristics of single units in bat auditory cortex 155:821 (Ostwald J)
–, cochlear responses from a skink 154:719, 729 (Holmes RM, Johnstone BM)
–, coding of pulsed sound signals in frog 155:57 (Walkowiak W)
–,– of sound location and frequency in bird auditory midbrain 157:149 (Calford MB et al.)
–, collicular responses to wing beat echoes in bat 155:121 (Schuller G)
–, cricket phonotaxis after killing of acoustic interneurons 154:795 (Atkins G et al.)
–, dependence of phonotaxis on cricket calling song features 153A:509 (Stout JF et al.)
–, directional effect of leg posture on locust – 152A:509 (Adam L-J)
–,– sensitivity of neurons in bat superior colliculus 154:253 (Poussin C, Schlegel P)
–, discrimination of calling song models by crickets 158:549 (Pollack GS)
–, Doppler-compensation in hipposiderid bats 155:559 (Habersetzer J et al.)
–, echolocation in bats 152A:421 (Vogler B, Neuweiler G)
–,– performance in bats 156:447, 457, 471 (Roverud RC, Grinnell AD)
–, effect of echolocation sounds on bat Doppler shift compensation 158:239 (Schuller G)
–, fluttering target detection in bats 159:765 (Emde G von der, Schnitzler H-U)
–, frequency selectivity of treefrog – 159:257 (Moss CF, Simmons AM)
–, frequency-place map in bat cochlea 157:671 (Vater M et al.), 687 (Kössl M, Vater M)
–, functional organization of bushcricket auditory sensilla 158:27 (Oldfield BP, Hill KG)
–, gap detection by grasshopper auditory fibres 157:631 (Ronacher B, Römer H)
–, horizontal angle discrimination by echolocating bat 153A:321 (Simmons JA et al.)
–, in a noctuid moth 159:267 (Surlykke A, Gogala M)
–, in the field by bushcrickets 158:647 (Rheinlaender J, Römer H); 159:627 (Römer H, Bailey WJ)
–, inferior colliculus responses in house mouse 156:619, 637 (Ehret G, Moffat AJM)
– in mouse-tailed bat 154:347 (Simmons JA et al.)
–, integration of auditory sensory information in tettigoniids 152A:495 (Oldfield BP, Hill KG)
–, intensity coding by moth auditory receptors 154:287 (Coro F, Pérez M)
–,– discrimination in neotropical tree-frogs 153A:403 (Zelick RD, Narins PM)
–, mechanics of locust tympanal organs 157:619 (Breckow J, Sippel M)
–, modulation of locust auditory responsiveness 158:813 (Boyan GS)
–,– of starling cochlear ganglion units 157:643 (Oeckinghaus H)
–, moth interneurones responding to sound 158:391 (Boyan GS, Fullard JH)
–, moth/bat acoustic relationships 155:795 (Fullard JH)
–, non-monotonic response-intensity characteristics of locust auditory receptors 155:633 (Sippel M, Breckow J)
–, of Japanese horseshoe bat 156:185 (Taniguchi I)
–, one-eared crickets track calling song 155:725 (Huber F et al.)
–, oscillating target detection by echolocating bat 153A:385 (Schnitzler H-U, Flieger E)
–, peripheral auditory directionality in crickets 153A:523 (Boyd P, Lewis B)
–, phonotaxis in crickets 152A:257 (Schmitz B et al.); 156:165 (Schmitz B)
–,– in flying crickets 159:423, 441 (Nolen TG, Hoy RR)
–, physiological properties of bat inner ear 157:587 (Henson OW et al.)
–, physiology and tonotopic organization of cricket auditory receptors 159:457 (Oldfield BP et al.)
–,– of locust auditory receptors 152A:475, 483 (Hill KG)
–,– of tettigoniid auditory receptors 155:689 (Oldfield BP)
–, pulse repetition rate as a cue for moth defensive behavior 154:249 (Fullard JH)
–, response of bushcricket giant interneurons to low-frequency sound 151A:449 (Shen J-X)
–,– to model songs by locust auditory neurons 156:845 (Römer H, Seikowsky U)
–, responses of auditory interneurons in freely moving grasshoppers 158:689, 697 (Wolf H)
–,– of bat inferior colliculus to tones and FM signals 157:797 (O'Neill WE)
–,– of cricket abdominal interneurons to low-frequency sound 155:507 (Kämper G)
–,– of locust auditory interneurons to electrical stimulation of tympanal nerve 152A:289 (Römer H, Rheinlaender J)
–,– to sound in locust SOG 156:413 (Boyan GS, Altman JS)
–, self-stimulatin of bat ear by vocalization 160:635 (Pietsch G, Schuller G)
–, song recognition in grasshopper 153A:393 (Skovmand O, Pedersen SB)
–, temperature effects on caiman auditory fibres 155:19 (Smolders JWT, Klinke R)
–,– shifts CF of pigeon auditory fibers 156:209 (Schermuly L, Klinke R)
–, temporal processing by treefrog auditory midbrain 157:763 (Rose GJ et al.)
–,– processing in toad auditory midbrain 154:211 (Rose GJ, Capranica RR)
–,– selectivity of auditory neurons in cricket brain 155:171 (Schildberger K)
–, trade-off phenomena in cricket calling song recognition 156:787 (Doherty JA)
–, two-tone suppression and song coding by cricket ascending neurons 154:423 (Boyd P et al.)
–,– suppression in cricket auditory neuron 152A:155 (Moiseff A, Hoy R)
–,– suppression in song coding by cricket ventral cord neurons 154:103 (Hutchings M, Lewis B)
–, tympanal membrane motion in cricket ear 151A:397 (Kleindienst H-U et al.)
Hearing, see also acoustic, auditory, echolocation, phonotaxis
Heart, cardio-regulator nerves inside crab – 154:871 (Yazawa T, Kuwasawa K)
–,– nerves of crabs 155:313 (Yazawa T, Kuwasawa K)
–, nervous regulation in isopod crustacean – 154:883 (Kihara A, Kuwasawa K)
–, neural control of leech – 154:367, 381 (Maranto AR, Calabrese RL), 393 (Calabrese RL, Maranto AR)
Heart, see also cardio-, cardiac
Heart-activity, effects of feeding on slug – 156:539 (Grega DS, Prior DJ)
Heartbeat central pattern generator in leeches 155:783 (Arbas EA, Calabrese RL)
Heat, responses of *Paramecium* to – 153A:39 (Hennessey TM et al.)
Heliothis, auditory interneurones 158:391 (Boyan GS, Fullard JH)
Hellgrammite, see *Corydalus*
Heloderma, thermal dependence of locomotion and aerobic capacity 151B:119 (John-Alder HB et al.)
Hemilepistus, chemoreceptors 152A:219 (Seelinger)
Hemolymph composition in tarantula 152B:73 (Schartau W, Leidescher T)
Hemolymph, see also blood, haemolymph
Hemorrhage, cardiorespiratory responses of snakes to – 152B:59 (Lillywhite HB et al.)

Heron, see *Egretta*
Heteroptera, see *Notonecta, Rhodnius*
Hibernation, bat pectoralis muscle during – 152:97, 137 (Yacoe ME)
Hindwing movements of locusts 160:657 (Schwenne T, Zarnack W)
Hippocampus, effect of melatonin on excitability of cells in – 157:23 (Zeise ML, Semm P)
Hipposideros, fluttering target detection 159:765 (Emde G von der, Schnitzler H-U)
–, foraging and Doppler-compensation 155:559 (Habersetzer J et al.)
–, movement detection 159:403 (Link A et al.)
–, ontogeny of sound emission 158:247 (Habersetzer J, Marimuthu G)
–, spectral sensitivity of circadian rhythm 156:189 (Joshi D, Chandrashekaran MK)
Hirudo, chemosensory stimuli in feeding behavior 159:391 (Elliott EJ)
–, fast conducting system 154:781 (Peterson EL)
–, feeding behavior 154:449 (Dickinson MH, Lent CM), 457 (Lent CM, Dickinson MH)
–, hearbeat central pattern generator 155:783 (Arbas EA, Calabrese RL)
–, integration in a visual interneuron 155:543 (Peterson EL)
–, kinematics of crawling 158:593 (Stern-Tomlinson W et al.)
–, microanalysis of photoreceptors 154:81 (Walz B, Somlyo AP)
–, nephridial nerve cell 152A:455 (Wenning A)
–, neural control of hearts 154:367, 381 (Maranto AR, Calabrese RL), 393 (Calabrese, RL, Maranto AR)
–, neuronal control of swimming movements 156:231 (Friesen WO)
–, potassium concentration changes in photoreceptors 157:199 (Walz B)
–, swimming evoked by sensory cell intracellular stimulation 160:447 (Debski EA, Friesen WO)
–, trigger neurons in subesophageal ganglion 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
–, visual interneurons in brain 156:697, 707, 719 (Peterson EL)
Holocentrus, electrophysiology of nucleus isthmi 152A:545 (Williams B et al.)
Homarus, amine modulation of motor activity 156:875 (Harris-Warrick RM)
–, driver potentials in cardiac ganglion 151A:329 (Tazaki K, Cooke IM)
–, ionic basis of driver potentials in cardiac ganglion units 157:845 (Berlind A)
–, motor neurons in swimmeret system 160:55 (Cattaert D, Clarac F)
–, oscillatory command input to motor pattern generators 154:473 (Robertson RM, Moulins M)
–, postural interneurons in abdominal nervous system 158:259, 273, 281 (Jones KA, Page CH)
–, tactile stimulation of swimmeret system 158:225 (Kotak VC, Page CH)
–, tuning of taste receptors 155:593 (Johnson BR et al.)
Honeybee, see *Apis*
Hormonal control of sex differences in mormyrid EOD 156:587 (Bass AH, Hopkins CD)
Hormone, antidiuretic, role in dog and duck osmoregulation 151B:241 (Gray DA, Simon E)
–, eclosion, physiological regulation of moth – 158:445 (Copenhaver PF, Truman JW)
–, juvenile, induction of antifreeze protein production in a beetle larva 151B:233 (Horwath KL, Duman JG)
–, juvenile – induced modulation of bee pheromone preception 160:613 (Robinson GE)
Hormones, action of bag cell neurons on *Aplysia* arteries 157:31 (Ligman SH, Brownell PH)
–, androgen effect on electroreceptor tuning 155:173 (Bass AH, Hopkins CD); 158:301 (Keller CH et al.)
–, androgen-binding pathways in electric fish 159:535 (Bass AH et al.)
–, androgen-induced calls in female frogs 158:517 (Hannigan P, Kelley DB)
–, ecdysteroid effects on timing of hemipteran ecdysis 157:699 (Ampleford EJ)
–, effects of methyltestosterone and oestradiol on leucine transport in trout intestine 151B:247 (Habibi H et al.)
–, – of 5α-dihydrotestosterone on gymnotid EOD 156:511 (Hagedorn M, Carr C)
–, estrogen-induced changes in EOD and receptor tuning in electric fish 160:385 (Meyer JH et al.)
–, gonadal role in slug reproductive maturation 158:151 (McCrone EJ, Sokolove PG)
–, olfactory responses of mature and gonadally-regressed goldfish to 17,20P and progesterone 160:305 (Sorensen PW et al.)
–, peptide, in crab X-organ sinus gland 153B:191 (Stuenkel EL)
–, prostaglandin-induced mating call phonotaxis in toad 156:823 (Schmidt RS)
–, role of Y-organ and cephalic gland in ecdysteroid production 152B:91 (Jegla TC et al.)
–, sea lamprey catecholamines 152B:35 (Dashow L, Epple A)
–, steroid regulation of peptide action in moth CNS 157:423 (Morton DB, Truman JW)
–, testosterone and territoriality in a lizard 158:159 (Moore MC)
–, testosterone-dependent rhythmic behaviors in quail 158:17 (Wada M)
Horseshoe crab, see *Limulus*
Hydromedusa, see *Polyorchis*
Hydrozoa, neuronal mechanisms of shadow reflex in *Polyorchis* 159:201, 215 (Arkett SA, Spencer AN)
Hygroreceptor, identification and response characteristics of stick insect – 160:43 (Tichy H)
Hyla, acoustic communication in hybrids 154:319 (Doherty JA, Gerhardt HC)
–, – communication 155:577 (Wilczynski W et al.), 585 (Brenowitz EA et al.)
–, frequency selectivity of hearing 159:257 (Moss CF, Simmons AM)
–, temporal processing in auditory midbrain 157:763 (Rose GJ et al.)
Hymenoptera, spectral sensitivity of photoreceptors 158:165 (Menzel R et al.)
Hymenoptera, see also *Apis, Camponotus, Cataglyphis, Nasonia, Solenopsis*
Hypercapnia, effects on trout blood acid-base balance 152B:53 (Thomas S)
–, exogenous and endogenous, in rainbow trout 151B:185 (Thomas S et al.)
Hyperolius, phonotaxis 154:189 (Passmore NI et al.)
Hypopomus, neural correlates of novelty detection 159:191 (Grau HJ, Bastian J)
–, sexually dimorphic electric signals 156:511 (Hagedorn M, Carr C)
Hypothalamic photosensitive area, electrical stimulation in quail 154:583 (Ohta M et al.)
Hypothermia, nocturnal, in willow tit 151B:109 (Reinertsen RE, Haftorn S)
Hypoxia, effects on pulmonary function and metabolism in anurans 152B:125 (Withers PC, Hillman SS)
–, – on trout blood acid-base balance 152B:53 (Thomas S)
–, – on ventilatory control in turtle 151B:145 (Glass ML et al.)

I

Ichthyomyzon, coordination of central pattern generator for locomotion 160:181 (Cohen AH)
–, electroreceptors 152A:209 (Bodznik D, Preston DG)
–, non-ampullary electroreceptors 158:9 (Ronan MC, Bodznick D)
–, respiratory bursts in rostral medulla 157:303 (Rovainen CM)
–, – motoneurons in brain 157:291 (Thompson KJ)
–, sensory dorsal cells in brain 156:181 (Rovainen CM, Yan Q)
Ictalurus, auditory response of saccular neurons 155:615 (Moeng RS et al.)
Image quality in crayfish superposition eye 151A:367 (Bryceson KP, McIntyre P)
Immobilization, unilateral neuromuscular effects in crayfish claws 157:461 (Pahapill PA et al.)
Infrared sensitive tectal neurons, thresholds in snake – 151A:461 (Cock Buning T de)
Inheritance of sandhopper solar direction finding 151:435 (Pardi L, Scapini F); 156:729 (Scapini F et al.); 157:433 (Scapini F, Buiatti M)

Inhibition, electrical, in butterfly retina 152A:169 (Matić T)
–, lateral, in *Limulus* eye 152A:517 (Renninger GH)
–, –, mediated by LDS interneurons in crayfish terminal ganglion 151A:261 (Reichert H et al.)
–, –, of crayfish local interneuron 157:499 (Krenz WD, Reichert H)
–, peripheral, of crab vibration-sensitive units 154:49 (Aicher B, Tautz J)
–, presynaptic, in crayfish brain 156:477 (Glantz RM et al.), 605 (Wang-Bennett LT, Glantz RM)
–, –, of crayfish mechanosensory afferents 153A:443 (Fricke RA, Kennedy D)
–, surround, interneurons mediate – in crayfish optic lobe 156:763 (Waldrop B, Glantz R)
Inhibitor, local, of crayfish motor giant neurons 158:69 (Kirk MD et al.)
Inhibitory system, coordination of – regulating fly feeding behavior 158:713 (Bowdan E, Dethier VG)
Insecta, acoustic rate sensitivity in *Cycnia* 154:249 (Fullard JH)
–, afferent control of *Cuniculina* walking 158:345, 351 (Bässler U)
–, afferent-to-motoneuron synapses in *Manduca* 160:315 (Weeks JC, Jacobs GA)
–, air vortex rings as communication signals in *Phaeophilacris* 160:79 (Heinzel H-G, Dambach M)
–, alkaloids regulate organogenesis and biosynthesis in *Creatonotos* 157:569 (Boppré M, Schneider D)
–, amines on evoked potentials in *Apis* brain 151A:469 (Mercer AR, Erber J)
–, angular sensitivity of *Calliphora* photoreceptors 154:761 (Hateren JH van); 155:239 (Smakman JGJ et al.); 160:501 (Smakman JGJ, Stavenga DG)
–, antennal information to mushroom body neurons in *Apis* 154:825 (Homberg U)
–, ascending auditory interneurons in *Caedicia* 152A:495 (Oldfield BP, Hill KG)
–, attractiveness of male *Acheta* calling song to females 153A:509 (Stout JF et al.)
–, auditory behavior of *Gryllus* 155:725 (Huber F et al.)
–, – directionality in crickets 153A:523 (Boyd P, Lewis B)
–, – input to *Barathra* motor neurons 160:23 (Madsen BM, Miller LA)
–, – input to *Locusta* flight system 156:79 (Boyan GS)
–, – interneuron in *Teleogryllus* 152A:155 (Moiseff A, Hoy R)
–, – interneurones in *Heliothis* 158:391 (Boyan GS, Fullard JH)
–, – interneurons of *Locusta* 155:249 (Römer H, Marquart V)
–, – neuron responses in freely moving *Chorthippus* 158:689, 697 (Wolf H)
–, – neurons after foreleg amputation in *Gryllus* 158:291 (Schildberger K et al.)
–, – neurons in *Gryllus* brain 155:171 (Schildberger K)
–, – pattern and direction processing in *Chorthippus* 154:837 (Helversen D von)
–, – receptor responses in noctuoid moths 154:441; 156:689; 159:115 (Pérez M, Coro F)
–, – receptors of *Gryllus* 159:457 (Oldfield BP et al.)
–, – response to model songs in *Locusta* CNS 156:845 (Römer H, Seikowski U)
–, bristle hair thoracic afferent projection in *Acheta* 156:369 (Johnson SE, Murphey RK)
–, cable properties of *Locusta* ocellar L-neurons 158:339 (Ammermüller J)
–, *Caedicia* auditory sensilla 158:27 (Oldfield BP, Hill KG)
–, calcium and photoreceptor response in *Calliphora* 156:53 (Hochstrate P, Hamdorf K)
–, celestial orientation in *Apis* 155:605 (Rossel S, Wehner R)
–, central projections of *Caedicia* auditory fibers 151A:389 (Oldfield BP)
–, centrophobism in *Drosophila* 156:319, 329 (Götz KG, Biesinger R)
–, cercus-to-giant interneuron system of *Tettigonia* 151A:449 (Shen J-X)
–, charge of screening pigment granules in *Ephestia* eye 157:667 (Weyrauther E, Seitz G)
–, chemical noise in *Musca* photoreceptors 156:339 (Minke B, Stephenson RS)
–, chemo-orientation of *Trogoderma* males 158:729 (Tobin TR, Bell WJ)
–, choice and non-choice paradigms in *Gryllus* phonotaxis 157:279 (Doherty JA)
–, chordotonal organ inhibits giant interneurones in *Periplaneta* 153A:377 (Bernard J et al.)
–, circadian and circa-bi-dian flight rhythms of *Culiseta* 155:1 (Clopton JR)
–, – clock of *Samia* gut-purge rhythm 155:639 (Mizoguchi A, Ishizaki H)
–, – pacemaker in *Leucophaea* optic tracts 152A:231 (Page TL)
–, – system in *Leucophaea* 153A:353 (Page TL)
–, classical conditioning in *Drosophila* 157:263 (Tully T, Quinn WG)
–, cold receptors on *Speophyes* antennae 153A:343 (Corbière-Tichané G, Loftus R)
–, colour vision in butterflies 155:529 (Horridge GA et al.)
–, compensation for altered cercal position in *Periplaneta* 155:31 (Comer C, Camhi JM)
–, conditioned responding to magnetic fields by *Apis* 157:67 (Walker MM, Bitterman ME)
–, conditioning of *Drosophila* clock mutants 151A:545 (Jackson FR et al.)
–, conduction block of action potentials in *Decticus* muscle 154:431 (Theophilidis G)
–, contribution of colour receptors to motor output in *Calliphora* 157:417 (Kirschfeld K, Vogt K)
–, control of *Coccinella* walking speed 156:395 (Zanker JM, Collett TS)
–, – of *Gyrinus* chasing behavior 158:405 (Bendele H)
–, – of leg potraction in *Carausius* 155:771 (Dean J)
–, – of neurosecretion in *Manduca* 158:445 (Copenhaver PF, Truman JW)
–, – of steering postures in *Schistocerca* flight 159:849 (Arbas EA)
–, coupling of *Calliphora* neuro-ommatidial photoreceptors 158:795 (Hateren JH van)
–, courtship behavior of *Nasonia* 155:233 (Assem J van den et al.)
–, CO_2 receptor on labial palps of *Rhodogastria* 158:741 (Bogner F et al.)
–, current source-density in *Apis* mushroom bodies 154:569 (Kaulen P et al.)
–, currents in *Locusta* ocellar neurons 159:363 (Ammermüller J, Zettler F)
–, dance orientation in *Apis* 157:183 (Dyer FC)
–, defects in a *Drosophila* memory mutant 155:569 (Dudai Y et al.)
–, deoxyglucose mapping of nervous activity in *Drosophila* brain 155:471 (Buchner E et al.); 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
–, development of *Locusta* auditory neurons 151A:499 (Boyan GS)
–, deviation detector neurons in *Locusta* 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
–, directional proboscis extension in *Phormia* 160:367 (Yetman S, Pollack GS)
–, directionally selective cells in *Locusta* medulla 159:841 (Osorio D)
–, discrimination of calling song models by *Teleogryllus* 158:549 (Pollack GS)
–, dynamics of phototransduction 154:707 (Howard J et al.)
–, ectopic neurons in *Acheta* 156:381 (Murphey RK et al.)
–, effect of endocrine system on *Locusta* flight motor pattern 155:129 (Kutsch W, Stevenson P)
–, – of leg posture on locust hearing 152A:509 (Adam L-J)
–, electrical stimulation of *Locusta* auditory pathway 152A:289 (Römer H, Rheinlaender J)
–, electrochemical gradients across locust Malpighian tubules 151B:175 (Morgan PJ, Mordue W)
–, electrophysiology of *Cataglyphis* eye regions 158:1 (Labhart T)
–, ERG transients in *Drosophila* 159:665 (Coombe PE)
–, escape turning behavior of cockroach 160:571 (Comer CM, Dowd JP)
–, external auditory structures in notodontid moths 155:625 (Fullard JH)
–, fixation behavior in *Drosophila* 155:661 (Coombe PE)

–, flight initiation in *Locusta* 158:81 (Pearson KG et al.)
–,– maintenance mechanism in *Periplaneta* 155:697 (Yagodin SV, Kovbasa SI)
–, fluorescence in *Drosophila* compound eye 154:297 (Miller GV et al.)
–, GABAergic action in *Locusta* ocellus 157:779 (Ammermüller J, Weiler R)
–,– activities in *Locusta* CNS 157:343 (Breer H, Heilgenberg H)
–,– neurons in *Calliphora* visual system 159:241 (Datum K-H et al.)
–, gap detection by *Chorthippus* auditory receptors 157:631 (Ronacher B, Römer H)
–, geographic variation in *Ostrinia* photoperiodism 156:653 (Takeda M, Skopik SD)
–, geographical variation in *Drosophila* time measurement 159:123 (Lankinen P)
–, glutamate dehydrogenase isozymes in *Popillia* 151B:199 (Male KB, Storey KB)
–, gravity-orientation in *Sitophilus* 159:377 (Wendler G, Scharstein H)
–, hearing in the field by tettigoniids 158:647 (Rheinlaender J, Römer H); 159:627 (Römer H, Bailey WJ)
–, heritable odor discrimination in *Apis* 159:251 (Getz WM et al.)
–, induction of rhythmicity in *Rhodnius* 157:699 (Ampleford EJ)
–, influence of arctiid moth clicks on bat echolocation 156:831 (Surlykke A, Miller LA)
–, information processing in cercal systems 154:805 (Rozhkova GI et al.)
–, inhibition in *Papilio* retina 152A:169 (Matić T)
–, inhibitory pheromone of *Solenopsis* queen 153A:467 (Fletcher DJC, Blum MS)
–,– system regulating *Phormia* feeding behavior 158:713 (Bowdan E, Dethier VG)
–, input to *Locusta* flight motoneurons 154:745 (Hedwig B, Pearson KG)
–, intensity coding by *Empyreuma* auditory receptors 154:287 (Coro F, Pérez M)
–, interactions in *Calliphora* photoreceptors 154:175 (Minke B, Kirschfeld K)
–,– of median ocellar neurons in locusts 159:97 (Simmons PJ)
–, interneurons in *Teleogryllus* flight system 160:431 (Robertson RM)
–, intersegmental interneurones in *Schistocerca* 159:171 (Laurent G)
–, invariance of visual stimulus efficacy in *Calliphora* 154:555 (Horn E, Knapp A)
–, landmark learning in *Apis* 151A:521 (Cartwright BA, Collett TS)
–, learning of landmark colours in *Apis* 159:69 (Cheng K et al.)
–, light response of *Apis* in magnetic field 154:865 (Leucht T)
–, maps of acute zones of blowfly eyes 156:525 (Land MF, Eckert H)
–, measurements of *Locusta* hindwing movements 160:657 (Schwenne T, Zarnack W)
–, mechanical power output of *Schistocerca* flight muscle 160:413 (Mizisin AP, Josephson RK)
–, mechanics of locust tympanal organs 157:619 (Breckow J, Sippel M)
–, memory and sun compensation by *Apis* 160:621 (Dyer FC)
–, micronanalysis of *Apis* retina 156:213 (Coles JA, Rick R)
–, modulation of alarm pheromome perception in honeybee 160:613 (Robinson GE)
–,– of *Locusta* auditory responsiveness 158:813 (Boyan GS)
–, motor output during *Locusta* flight 158:653 (Thüring DA)
–,– patterns in locust flight 160:259 (Pearson KG, Wolf H), 269 (Wolf H, Pearson KG)
–, multimodal interneurons in *Acheta* brain 154:71 (Schildberger K)
–, mutant sensitive to developmental temperature in *Drosophila* 151A:483 (Minke B)
–, natural phototaxis and colour vision in *Apis* 157:311 (Menzel R, Greggers U)
–, neck motor system of *Calliphora* 160:205 (Strausfeld NJ et al.), 225 (Milde JJ et al.)
–, neural coding of salt taste quality in *Calliphora* 159:75 (Maes FW, Harms G), 89 (Maes FW, Ruifrok ACC)
–,– organization of ecdysis in *Manduca* 155:407, 423 (Weeks JC, Truman JW)
–,– pathways in *Drosophila* 156:13 (Benshalom G, Dagan D)
–, neurodepressing factor in *Carausius* haemolymph 152A:283 (Finlayson LH et al.)
–, nonlinearities in *Locusta* photoreceptors 156: 645 (French AS, Kuster JE)
–, ocellar interneurons in *Apis* 154:683 (Milde JJ); 155:151 (Milde JJ, Homberg U)
–, olfactory discrimination in *Drosophila* 152A:373 (Borst A)
–,– receptor cells in bark beetle and its predator 157:335 (Tømmerås BÅ)
–,– receptors in *Carausius* 152A:459 (Tichy H, Loftus R)
–,– sensitivity of *Apis* 160:239 (Getz WM, Smith KB)
–, ommatidium in ventral compound eye of *Sympetrum* 151A:285 (Armett-Kibel C, Meinertzhagen I.A.)
–, oxidative metabolism in *Schistocerca* rectum 151B:191 (Chamberlin ME, Phillips JE)
–, parallel effects of joint receptors in *Schistocerca* 160:341 (Laurent G)
–, pheromone blend perception in *Trichoplusia* 156:747 (O'Connell RJ)
–, pheromone-selective neurons in *Manduca* brain 160:553 (Christensen TA, Hildebrand JG)
–, pheromone-specific receptor cells in *Ips* 154:591 (Mustaparta H et al.)
–, pheromone-triggered interneurons in *Bombyx* ventral nerve cord 152A:297 (Olberg RM)
–, phonotactic specificity in *Teleogryllus* 157:223 (Doolan JM, Pollack GS)
–, phonotaxis in flying crickets 159:423, 441 (Nolen TG, Hoy RR)
–,– in *Gryllus* 152A:257 (Schmitz B et al.); 156:165 (Schmitz B)
–,– in *Teleogryllus* 154:13 (Pollack GS et al.)
–,– of *Acheta* after killing of acoustic interneurons 154:795 (Atkins G et al.)
–, phosphorylation of *Calliphora* opsin 155:39 (Paulsen R, Bentrop J)
–, photodestruction in *Musca* photoreceptors 154:153 (Zhu H, Kirschfeld K)
–, photoperiod of diapause termination in *Pieris* 155:161 (Brunnarius J, Dumortier B)
–, photoperiodic time measurement in *Sarcophaga* 154:789 (Saunders DS)
–, photoreceptor mitochondrial activity in *Calliphora* 160:195 (Tinbergen J, Stavenga DG)
–, photoreceptors in fly dorsal marginal ommatidia 154:157 (Hardie RC)
–, physiology of auditory receptors in Tettigoniidae 155:689 (Oldfield BP)
–,– of *Gryllus* compound eye 155:289 (Labhart T et al.)
–,– of *Locusta* auditory receptors 152A:475, 483 (Hill KG)
–, pigment migration in *Deilephila* retina 159:353 (Hamdorf K et al.)
–,– migration in *Manduca* eye 153A:59 (White RH et al.)
–,– migration in *Theretra* eye 160:355 (Land MF)
–, plunge reaction of *Notonecta* 155:319 (Schwind R)
–, polarization pattern analysis by *Apis* 154:607 (Rossel S, Wehner R)
–,– vision in *Notonecta* 154:53 (Schwind R)
–, polarized skylight orientation in *Cataglyphis* 158:145 (Fent K)
–, post-bloodmeal diuresis in *Aedes* 153B:257 (Williams JC et al.)
–, potassium transport in *Manduca* integument 153B:147 (Cornell JC, Jungreis AM)
–, preparatory behavior rhythm in *Manduca* 155:521 (Truman JW)
–, processing of auditory information in *Chorthippus* CNS 158:363 (Ronacher B et al.)
–,– of vibratory signals in *Locusta* nervous system 156:45 (Čokl A et al.)
–, proprioceptor actions and interactions in *Locusta* 157:73, 83 (Bräunig P, Hustert R)
–, queen control over production of sexuals in *Solenopsis* 159:741 (Vargo EL, Fletcher DJC)
–, range fractionation in *Gryllus* cercal system 155:485, 495 (Shimozawa T, Kanou M)
–, reactions of tympanate moths to bat echolocation signals 155:795 (Fullard JH)
–, rectal oxygen consumption 153B:223 (Sell D, Houlihan DF)
–, renewal of *Calliphora* visual pigment 154:535 (Schwemer J)
–, resolving power of lepidopteran diurnal superposition eyes 154:515 (Land MF)

Insecta, respiratory interneurons in *Anax* larva 154:331 (Komatsu A)
–, response characteristics of *Locusta* auditory receptors 155:633 (Sippel M, Breckow J)
–, responses of *Carausius* cold receptor 160:33 (Tichy H, Loftus R)
–, – of *Carausius* hygroreceptor 160:43 (Tichy H)
–, – of *Gryllus* abdominal interneurons to low-frequency sound 155:507 (Kämper G)
–, – of *Rhagoletis* tarsal chemoreceptors 154:143 (Bowdan E)
–, – to sound in locust SOG 156:413 (Boyan GS, Altman JS)
–, retinal-binding protein in *Apis* retina 154:549 (Schwemer J et al.)
–, role of dopamine in *Apis* antennal lobes 160:359 (Macmillan CS, Mercer AR)
–, – of interneurons in *Omocestus* stridulation 158:413, 429 (Hedwig B)
–, – of proprioception in *Locusta* flight control 156:93, 103, 281 (Möhl B)
–, somatotopic sensory projections in *Manduca* larvae 157:1 (Levine RB et al.)
–, satellite nervous sytem in *Locusta* 160:69 (Bräunig P)
–, second cercal sensory system in *Acheta* 156:357 (Murphey RK)
–, sense organs controlling leg movements in walking *Carausius* 154:695 (Cruse H et al.)
–, sex pheromone components of *Periplaneta* 152A:309 (Sass H)
–, song coding by *Gryllus* neurons 154:423 (Boyd P et al.)
–, – coding by *Teleogryllus* ventral cord neurons 154:103 (Hutchings M, Lewis B)
–, – harmonic content and phonotaxis in *Teleogryllus* 158:583 (Latimer W, Lewis DB)
–, – recognition in *Omocestus* 153A:393 (Skovmand O, Pedersen SB)
–, sound production in cicadas 152A:183, 197 (Young D, Josephson RK)
–, – production in *Galleria* 159:751 (Spangler HG)
–, spatial vision in *Apis* 151A:441 (Menzel R, Lieke E)
–, spectral characteristics of *Calliphora* rhabdoms 155:47 (Paulsen R)
–, – receptors in *Sympetrum* retina and lamina 151A:295 (Meinertzhagen IA et al.)
–, – sensitivity of hymenopteran photoreceptors 158:165 (Menzel R et al.)
–, – sensitivity studied with FIS 158:669 (Paul R et al.); 160:247 (Steiner A et al.)
–, stereospecificity in *Boettcherisca* sugar receptor 157:477 (Shimada I et al.)
–, steroid regulation of peptide action in *Manduca* CNS 157:423 (Morton DB, Truman JW)
–, strand receptor connections in locusts 160:295 (Pflüger H-J, Burrows M)
–, strength-duration properties of *Periplaneta* sensory neuron 159:757 (French AS)
–, stridulation and hearing in *Thecophora* 159:267 (Surlykke A, Gogala M)
–, switching-off of an auditory interneuron in *Chorthippus* 158:861 (Wolf H, Helversen O von)
–, synapse frequency after chromatic deprivation in *Apis* 151A:477 (Hertel H)
–, tactile spine action potentials in *Periplaneta* 155:803 (French AS)
–, target-selective visual interneurons in dragonfly ventral nerve cord 159:827 (Olberg RM)
–, temperature effects on action potential encoding in *Periplaneta* 156:817 (French AS)
–, temporal acuity of *Apis* vision 155:297 (Srinivasan M, Lehrer M)
–, – resolution of *Apis* colour vision 157:579 (Srinivasan M, Lehrer M)
–, the dipteran 'Giant fibre' pathway 158:529 (Bacon JP, Strausfeld NJ)
–, thoracic interneurons in *Periplaneta* 159:639 (Ritzmann RE, Pollack AJ)
–, thresholds of *Gryllus* cercal interneurons 154:357 (Kanou M, Shimozawa T)
–, trade-off phenomena in *Gryllus* phonotaxis 156:787 (Doherty JA)
–, transfer of a time signal in *Apis* 160:3 (Martin H, Martin U)
–, triggering of pigment migration in *Ephestia* eye 159:55 (Weyrauther E)
–, tympanal membrane motion in *Gryllus* 151A:397 Kleindienst H-U et al.)
–, variability in *Calliphora* taste responses 157:211 (van der Molen JN et al.)
–, ventilatory motor patterns in *Corydalus* 153A:542 (Kinnamon SC, Kammer AE)
–, vibration signals of *Apis* queens 158:605 (Michelsen A et al.)
–, visual adaptation in nocturnal and diurnal ants 160:11 (Menzi U)
–, – edge fixation and skototaxis in *Tenebrio* 160:543 (Varjú D)
–, – interneurons in *Boettcherisca* lobula 157:831 (Umeda K, Tateda H)
–, – learning in walking *Lucilia* 157:771 (Fukushi T)
–, – orientation in *Lymantria* 154:493 (Preiss R, Kramer E)
–, – performance of *Cyrtodiopsis* 151A:407 (Burkhardt D, Motte I de la)
–, – pigments in *Notonecta* eye 154:341 (Schwind R et al.)
–, – processing of color stimuli in *Pieris* 160:645 (Scherer C, Kolb G)
–, – scanning behavior in *Apis* 157:405 (Lehrer M et al.)
–, visualization of *Locusta* neurons 158:625 (Reichert H, Krenz WD)
–, V-log I curves of lepidopteran eyes 154:3 (Eguchi E, Horikoshi T)
–, wind-sensitive interneurons in *Archimantis* 159:773 (Boyan GS, Ball EE)
–, wing stroke frequency in *Calliphora* 153A:289 (Otzen H, Kuiper JW)
–, winter survival of cold hardy beetles 151B:225, 233 (Horwath KL, Duman JG)
–, working of velocity filter in *Acrophylla* 157:823 (Koch UT, Brunner M)
Integument, potassium transport in tobacco hornworm – 153B:147 (Cornell JC, Jungreis AM)
Interneuron, auditory, responses in freely moving grasshopper – 158:689, 697 (Wolf H)
–, –, sensitivity to ultrasound in cricket – 152A:155 (Moiseff A, Hoy R)
–, local nonspiking, lateral inhibition of – in crayfish mechanosensory system 157:499 (Krenz WD, Reichert H)
–, visual, integration in leech – 155:543 (Peterson EL)
Interneuronal interaction in crayfish abdominal positioning 156:861 (Jellies J, Larimer JL)
Interneurones, auditory, in a moth 158:391 (Boyan GS, Fullard JH)
–, giant, inhibited by chordotonal organ in cockroach 153A:377 (Bernard J et al.)
–, wind-sensitive, in mantis terminal ganglion 159:773 (Boyan GS, Ball EE)
Interneurons, abdominal, responses to low-frequency sound in crickets 155:507 (Kämper G)
–, acoustic, phonotaxis by crickets after killing of – 154:795 (Atkins G et al.)
–, auditory, in locust metathoracic ganglion 155:249 (Römer H, Marquart V)
–, –, physiology of tettigoniid – 152A:495 (Oldfield BP, Hill KG)
–, –, responses to electrical stimulation of tympanal nerve 152A:289 (Römer H, Rheinlaender J)
–, cercal, threshold analysis in cricket – 154:357 (Kanou M, Shimozawa T)
–, descending, reporting course deviation in locusts 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
–, giant, activation of cockroach mesothoracic motor neurons 154:633, 641 (Tobias ML, Ritzmann RE)
–, –, directional sensitivity in insect cercal systems 154:805 (Rozhkova GI et al.)
–, –, response to low-frequency sound 151A:449 (Shen J-X)
–, –, responses to rotation of cockroach cerci 155:31 (Comer C, Camhi JM)
–, in cricket flight system 160:431 (Robertson RM)
–, intersegmental, effects of joint receptors on locust – 160:341 (Laurent G)
–, –, in locust CNS 159:171 (Laurent G)
–, local directional selective (LDS), in crayfish terminal ganglion 151A:261 (Reichert H et al.)
–, – in crayfish swimmeret system 156:489 (Paul DH, Mulloney B)
–, – locust strand receptor connections to – 160:295 (Pflüger H-J, Burrows M)
– –, non-spiking, mediating surround inhibition in crayfish optic lobe 156:763 (Waldrop B, Glantz R)
–, –, non-spiking, pre-motor characteristics in crayfish 154:499 (Nagayama T et al.)

–, mechanosensory, coding of waterborne vibration frequency by crayfish – 158:751 (Plummer MR et al.)
–, multimodal, in cricket brain 154:71 (Schildberger K)
–, ocellar, in honeybee 154:683 (Milde JJ); 155:151 (Milde JJ, Homberg U)
–, pattern-initiating, in crayfish 160:169 (Moore D, Larimer JL)
–, plurisegmental, role in grasshopper stridulation 158:413, 429 (Hedwig B)
–, postural, in lobster abdominal nervous system 158:259, 273, 281 (Jones KA, Page CH)
–, thoracic, in cockroach giant interneuron pathways 159:639 (Ritzmann RE, Pollack AJ)
–, vibration sensitive, in fiddler crab 157:91 (Hall J)
–, visual, in fly lobula 157:831 (Umeda K, Tateda H)
–, –, in leech brain 156:697, 707, 719 (Peterson EL)
–, –, six spectral sensitivity classes in crab – 157:235 (Knight D, Leggett LMW)
Interneurons in leech fast conducting system 154:781 (Peterson EL)
Intestinal glucose transport in marine fish 152B:79 (Ferraris RP, Ahearn GA)
– solute uptake in vitro, method 152B:105 (Karasov WH, Diamond JM)
– transport in temperature-acclimated goldfish 151B:163 (Groot JA et al.)
Ion transport by locust Malpighian tubules 151B:175 (Morgan PJ, Mordue W)
Ionic basis of driver potentials in lobster cardiac ganglion neurons 157:845 (Berlind A)
Ips, olfactory receptor cells 157:335 (Tømmerås BÅ)
–, pheromone-specific receptor cells 154:591 (Mustaparta H et al.)
Ipsdienol-specific chemoreceptors in bark beetles 154:591 (Mustaparta H et al.)
Isopoda, see *Bathynomus, Hemilepistus, Porcellio, Porcellionides*
Isozymes, specific, of glutamate dehydrogenase in a Japanese beetle 151B:199 (Male KB, Storey KB)
Ixodoidea, tarsal thermoreceptors in *Amblyomma*
–, vitellogenin in *Ornithodoros* 152B:13 (Chinzei Y et al.)

J

Jamming avoidance response, evolution of – 160:491 (Rose G et al.)
– – –, processing in fish brain 154:895 (Bastian J, Yuthas J)
JAR, see jamming avoidance response
Jasus, pyloric pattern generator 153A:17 (Rezer E, Moulins M)
Jump, coupling to flight initiation in locusts 158:81 (Pearson KG et al.)

K

Kangaroo, see *Aepyprymnus*
K-channels, specificity in frog labyrinthine organ 155:739 (Valli P et al.)
K, see also potassium
Kin recognition, olfactory basis in toad tadpoles 156:565 (Waldman B)
Kingfisher, see *Dalceo, Halcyon*
Koala, see *Phascolarctos*

L

Labyrinthine organs, specificity of K-channels in – 155:739 (Valli P et al.)
Lactate metabolism in harbor seal 153B:275 (Davis RW)
Lactic acid, response of sea star to – 157:537 (Valentinčič T)
Ladybird, see *Coccinella*
Lagena stimuli, modulation of cochlear ganglion unit activity by – 157:643 (Oeckinghaus H)
Lamina ganglionaris, polarization sensitivity in crayfish – 156:315 (Sabra R, Glantz RM)
Lampetra, photoreception in pineal organ 159:1 (Tamotsu S, Morita Y)
–, respiratory pattern generation 158:91 (Russell DF)
–, visual cells and visual pigments 154:279 (Govardovskii VI, Lychakov DV)
Lamprey, see *Ichthyomyzon, Lampetra, Petromyzon*
Landmark colours learned by honeybees 159:69 (Cheng K et al.)
– learning in gerbils 158:835 (Collett TS et al.)
Landmarks, visual, use by gerbils 160:109 (Collett TS)
Larval release, tidal rhythm in incubating crab 159:21 (Saigusa M)
Laryngeal motor control in bat n. ambiguus 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
Lasiurus, effects of echolocation signals on moths 155:795 (Fullard JH)
Lateral line, direction sensitivity of toad – 158:469 (Zittlau KE et al.)
– –, electro- and mechanoreceptive units in axolotl – 154:33 (Münz H et al.)
– – lobe, electrosensory, gain control in fish – 158:505 (Bastian J)
– – organ, discrimination of spatial intervals by blind cave fish – 701 (Hassan ES)
– –, responses to water surface waves in clawed frog 160:667 (Elepfandt A, Wiedemer L)
– –, role in blind cave fish obstacle localization 157:837 (Teyke T)
– –, single unit activity in cichlid fish – 157:555 (Münz H)
– –, water wave localization by toad – 154:773 (Elepfandt A)
Learning, landmark – in bees 151A:521 (Cartwright BA, Collett TS)
– of food-aversion to amino acid deficient diets by slugs 159:281 (Delaney K, Gelperin A)
– of landmark colours by bees 159:69 (Cheng K et al.)
–, visual, in blowflies 157:771 (Fukushi T)
Leech, see *Haementeria, Hirudo, Macrobdella*
Leg ablation, effect on motor responses to GI stimulation in cockroach 154:641 (Tobias ML, Ritzmann RE)
– movement, control by sense organs in walking insects 154:695 (Cruse H et al.)
– protraction, influence of external forces in stick insect 155:771 (Dean J)
Lens, spherical aberration of fish – 154:415 (Kreuzer RO, Sivak JG)
Lepidoptera, colour vision 155:529 (Horridge GA et al.)
–, V-log I curves of the eyes of 46 species 154:3 (Eguchi E, Horikoshi T)
Lepidoptera, see also butterfly, moth, *Ostrinia, Phalanoides*
Leptograpsus, dawn rhabdom breakdown 153A:365 (Stowe S)
–, photoreceptor membrane dichroism and polarization sensitivity 154:597 (Doujak FE)
–, polarisation sensitivity of retinula cells 153A:435 (Stowe S)
Leptonychotes, aerobic diving limits 151B:171 (Kooyman GL et al.)
Leucin, effect of steroids on transport and absorption in trout intestine 151B:247 (Habibi H et al.)
Leucophaea, circadian pacemaker activity 152A:231 (Page TL)
–, internal coupling in circadian system 153A:353 (Page TL)
Leukocytes, temperature and stress effects on newt – 153A:81 (Bennett MF, Daigle KR)
Limax, feeding and cardiac activity 156:539 (Grega DS, Prior DJ)
–, food aversion learning 159:281 (Delaney K, Gelperin A)
–, gonadal role in reproductive maturation 158:151 (McCrone EJ, Sokolove PG)
Limulus, lateral inhibition in the eye 152A:517 (Renninger GH)
Listening for bats in a moth 154:249 (Fullard JH)
Littorina, optical properties of eye 152A:435 (Hamilton PV et al.)
Lizard, see *Anolis, Sceloporus, Uma*
Lobster, see *Homarus, Jasus, Palinurus, Panulirus*
Locomotion, actions and interactions of locust leg proprioceptors 157:73, 83 (Bräunig P, Hustert R)
–, afferent control of stick insect walking movements 158:345, 351 (Bässler U)
–, amine modulation of crayfish motor activity 156:875 (Harris-Warrick RM)
–, antennal movements in crayfish tactile localisation 157:607 (Zeil J et al.)

Locomotion, antennal proprioceptor responses in crayfish 157:363 (Sandeman DC)
–, – responses to leg movements in lobster 155:351 (Neil DM et al.)
–, auditory input to locust flight system 156:79 (Boyan GS)
–, calcium effects on movement of lamellibranch gill cilia 157:441, 451 (Stommel EW, Stephens RE)
–, cichlid fish eye movements 156:199 (Fernald RD)
–, ciliary motor control in a ciliate 154:113 (Deitmer JW et al.)
–, – reversal in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
–, cockroach escape turning behavior 160:571 (Comer CM, Dowd JP)
–, contribution of colour receptors to motor output in fly 157:417 (Kirschfeld K, Vogt K)
–, control of ctenophore ciliary motor responses 158:311 (Moss AG, Tamm SL)
–, – of leg protraction in stick insect 155:771 (Dean J)
–, – of steering postures in locust flight 159:849 (Arbas EA)
–, – of walking speed in ladybirds 156:395 (Zanker JM, Collett TS)
–, coordination of crayfish swimmeret rhythms 158:215 (Paul DH, Mulloney B)
–, coupling of flight initiation to jump in locusts 158:81 (Pearson KG et al.)
–, course deviation and brain interneurons in locusts 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
–, defensive responses in *Aplysia* 159:339 (Walters ET, Erickson MT)
–, development of toad vestibulo-ocular reflex 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
–, dual reflex motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
–, effect of air velocity on fly wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
–, effects of joint receptors on motor neurons and intersegmental interneurons in locusts 160:341 (Laurent G)
–, elastic strand receptors in crustaceans 160:599 (Cannone AJ)
–, endocrine effects on development of locust flight motor pattern 155:129 (Kutsch W, Stevenson P)
–, extraocular reflex organization in frog 158:179 (Dieringer N, Precht W)
–, eye motor dynamics in sharks 158:723 (Paulin MG, Montgomery JC)
–, flight maintenance mechanism in cockroach 155:697 (Yagodin SV, Kovbasa SI)
–, GI activation of T2 neurons in cockroach 154:633, 641 (Tobias ML, Ritzmann RE)
–, immobilization and neuromuscular synapses in crayfish claws 157:461 (Pahapill PA et al.)
–, intact and deafferented locust flight system 160:259 (Pearson KG, Wolf H), 269 (Wolf H, Pearson KG)
–, interneurons in cricket flight system 160:431 (Robertson RM)
–, interrelationship between – and posture in crayfish 157:509 (Tatsumi H et al.)
–, intersegmental coordination of lamprey central pattern generator 160:181 (Cohen AH)
–, kinematic study of leech crawling 158:593 (Stern-Tomlinson W et al.)
–, larval moth reflex behavior and afferent-to-motoneuron connections 160:315 (Weeks JC, Jacobs GA)
–, lobster abdominal posture responses to swimmeret stimulation 158:225 (Kotak VC, Page CH)
–, – pyloric pattern generator 153A:17 (Rezer E, Moulins M)
–, local inhibitor of crayfish telson-flexor motor giant neurons 158:69 (Kirk MD et al.)
–, locust intersegmental interneurones with inputs from a leg 159:171 (Laurent G)
–, measurement of locust hindwing movements 160:657 (Schwenne T, Zarnack W)
–, mechanical power output of locust flight muscle 160:413 (Mizisin AP, Josephson RK)
–, motor neurons in lobster swimmeret system 160:55 (Cattaert D, Clarac F)
–, – patterns during moth ecdysis 155:407, 423 (Weeks JC, Truman JW)
–, – patterns in newt embryos 152A:535 (Soffe SR et al.)
–, – system interactions in crayfish 157:547 (Takahata M, Hisada M)
–, multimodal motor-innervation of *Aplysia* gill 157:483 (Kurokawa M, Kuwasawa K)
–, neck flexion and flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
–, neural control of crayfish cyclic postural behavior 160:169 (Moore D, Larimer JL)
–, neuronal control of leech swimming movements 156:231 (Friesen WO)
–, – interactions in crayfish postural control system 156:861 (Jellies J, Larimer JL)
–, oscillatory command input to gastric motor pattern generator in lobster 154:473 (Robertson RM, Moulins M)
–, performance of motor systems in antarctic fish 154:241 (Montgomery JC, Macdonald JA)
–, pharnygeal movements during gastropod feeding sequences 155:209 (Susswein AJ et al.)
–, plurisegmental interneurons in grasshopper stridulation 158:413, 429 (Hedwig B)
–, postural interneurons in lobster abdominal nervous system 158:259, 273, 281 (Jones KA, Page CH)
–, pre-motor characteristics of crayfish local interneurons 154:499 (Nagayama T et al.)
–, role of proprioception in locust flight control 156:93, 103, 281 (Möhl B)
–, sense organs controlling leg movements in walking stick insect 154:695 (Cruse H et al.)
–, sensory cell stimulation elicits swimming in leech 160:447 (Debski EA, Friesen WO)
–, spikeless interaction of crayfish motoneuron dendrites 152A:335 (Nagayama T et al.)
–, spinal reflex pattern in tortoise 156:153 (Steffens H et al.)
–, strains in spider exoskeleton during – 157:115 (Blickhan R, Barth FG)
–, strand receptor synaptic connections with spiking local interneurons in locusts 160:295 (Pflüger H-J, Burrows M)
–, swimmeret local interneurons in crayfish 156:489 (Paul DH, Mulloney B)
–, synaptic input to locust flight motoneurons 154:745 (Hedwig B, Pearson KG)
–, tension receptors in crab walking leg muscle 157:355 (Hartman HB)
–, threshold for rabbit vestibular nystagmus 160:585 (Lau CGY, Honrubia V)
–, trigger neurons initiating leech swimming 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
–, turning tendencies and gravity-orientation in weevil – 159:377 (Wendler G, Scharstein H)
–, variability of motor output during locust flight steering 158:653 (Thüring DA)
Locomotor activity, circadian rhythms of quail – 158:17 (Wada M)
– rhythm in *Aplysia* 156:293 (Jordan WP et al.)
Locust, see *Locusta, Schistocerca*
Locusta, actions and interactions of proprioceptors 157:73, 83 (Bräunig P, Hustert R)
–, auditory input to flight system 156:79 (Boyan GS)
–, – interneurons in metathoracic ganglion 155:249 (Römer H, Marquart V)
–, – response to model songs 156:845 (Römer H, Seikowski U)
–, cable properties of ocellar L-neurons 158:339 (Ammermüller J)
–, corpora allata and flight motor pattern 155:129 (Kutsch W, Stevenson P)
–, coupling of flight initiation to jump 158:81 (Pearson KG et al.)
–, development of auditory neurons 151A:499 (Boyan GS)
–, deviation detector neurons 158:765 (Griss C, Rowell CHF), 775 (Rowell CHF, Reichert H)
–, directionally selective cells in medulla 159:841 (Osorio D)
–, effect of leg posture on hearing 152A:509 (Adam L-J)
–, electrical stimulation of auditory pathway 152A:289 (Römer H, Rheinlaender J)
–, electrochemical gradients across Malpighian tubules 151B:175 (Morgan PJ, Mordue W)
–, GABAergic action in ocellus 157:779 (Ammermüller J, Weiler R)

–, – activities in CNS 157:343 (Breer H, Heilgenberg H)
–, input to flight motoneurons 154:745 (Hedwig B, Pearson KG)
–, interactions of median ocellar neurons 159:97 (Simmons PJ)
–, mechanics of tympanal organs 157:619 (Breckow J, Sippel M)
–, modulation of auditory responsiveness 158:813 (Boyan GS)
–, motor output during flight steering 158:653 (Thüring DA)
–, – patterns in intact and deafferented flight system 160:259 (Pearson KG, Wolf H), 269 (Wolf H, Pearson KG)
–, movements of hindwings 160:657 (Schwenne T, Zarnack W)
–, nonlinearities in photoreceptors 156:645 (French AS, Kuster JE)
–, physiology of auditory receptors 152A:475, 483 (Hill KG)
–, processing of vibratory signals in ventral nerve cord 156:45 (Čokl A et al.)
–, response characteristics of auditory receptors 155:633 (Sippel M, Breckow J)
–, responses to sound in subesophageal ganglion 156:413 (Boyan GS, Altman JS)
–, role of proprioception in flight control 156:93, 103, 281 (Möhl B)
–, satellite nervous system 160:69 (Bräunig P)
–, strand receptor connections 160:295 (Pflüger H-J, Burrows M)
–, visualization of neurons 158:625 (Reichert H, Krenz WD)
–, voltage-dependent currents in ocellus 159:363 (Ammermüller J, Zettler F)
Lonchura, circannual rhythm of food intake 156:429 (Bhatt D, Chandola A)
Lucilia, maps of acute eyezones 156:525 (Land MF, Eckert H)
–, visual learning 157:771 (Fukushi T)
Lunar-rhythmic reproduction in a polychaete 156:553 (Franke H-D)
Lymantria, edge fixation and negative phototaxis 154:493 (Preiss R, Kramer E)
Lymnaea, in vivo recordings of neuroendocrine cells 158:853 (Ter Maat A et al.)

M

Macrobdella, action potentials in neurons 157:491 (Johansen J, Kleinhaus AL)
–, monosynaptic connection in ganglia 156:65 (Johansen J, Kleinhaus AL)
Magicicada, pure-tone song 152A:197 (Young D, Josephson RK)
Magnetic cells in pigeon visual system 159:619 (Semm P, Demaine C)
– compass, neural basis of pigeon – 155:283 (Semm P et al.)
– –, orientation in newts 158:103 (Phillips JB)
– field discrimination, learned, in tuna 155:673 (Walker MM)
– fields, honeybee conditioned responding to – 157:67 (Walker MM, Bitterman ME)
– field, light response of bee in – 154:865 (Leucht T)
– sensitivity, orientation of juvenile alligators 154:649 (Rodda GH)
Magnetite particles in salmon dermethmoid tissue 157:375 (Kirschvink JL et al.)
Magnetoreception, chains of single-domain magnetite particles in salmon 157:375 (Kirschvink JL et al.)
Malpighian tubules, electrochemical gradients across locust – 151B:175 (Morgan PJ, Mordue W)
Mammalia, acoustical cues in *Megaderma* prey detection 160:509 (Marimuthu G, Neuweiler G)
–, aerobic diving limits of immature Wedell seals 151B:171 (Kooyman GL et al.)
–, antidiuretic hormone in dog 151B:241 (Gray DA, Simon E)
–, audiograms of South Indian bats 154:133 (Neuweiler G et al.)
–, auditory cortex of *Rhinolophus* 155:821 (Ostwald J)
–, – self-stimulation by vocalization in *Rhinolophus* 160:635 (Pietsch G, Schuller G)
–, – sensitivity of *Noctilio* 155:91 (Wenstrup JJ)
–, autophagy in rat visual cells 156:669 (Remé C et al.)
–, circadian organization in *Phodopus* 159:7 (Puchalski W, Lynch GR)
–, – rhythms in *Mesocricetus* 153:123 (Lees JG et al.)
–, – rhythms of pineal NAT activity in *Phodopus* 160:593 (Steinlechner S et al.)
–, – wake and activity onset timing in mouse 158:827 (Welsh DK et al.)
–, collicular responses to wing beat echoes in *Rhinolophus* 155:121 (Schuller G)
–, cone systems in rabbit retina 151A:347 (Nuboer JFW et al.)
–, control of echolocation pulses in *Rhinolophus* nucleus ambiguus 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
–, cortical FM-FM sensitive neurons in *Pteronotus* 159:331 (Taniguchi I et al.)
–, digestion in the koala 152B:43 (Cork SJ, Warner ACI), 152B:131 (Cork SJ, Hume ID), 153B:181 (Cork SJ et al.)
–, echolocation and hearing in *Rhinopoma* 154:347 (Simmons JA et al.)
–, – behavior of *Rhinolophus* 157:39 (Schnitzler H-U et al.)
–, – calls of emballonurid bats 151A:515 (Barclay RMR)
–, – in *Nyctalus* and *Rhinolophus* 152A:421 (Vogler B, Neuweiler G)
–, – of moving targets by *Noctilio* 155:75 (Wenstrup JJ, Suthers RA)
–, – performance in *Noctilio* 156:447, 457, 471 (Roverud RC, Grinnell AD)
–, – sounds and Doppler shift compensation in *Rhinolophus* 158:239 (Schuller G)
–, – sounds and hearing of *Rhinolophus* 156:185 (Taniguchi I)
–, effect of amiloride on *Mesocricetus* gustation 160:281 (Herness MS)
–, effects of *Lasiurus* echolocation signals on moths 155:795 (Fullard JH)
–, evoked potentials of *Phocoena* auditory cortex 158:705 (Popov VV et al.)
–, fluttering target detection by *Hipposideros* 159:765 (Emde G von der, Schnitzer H-U)
–, foraging and Doppler-compensation in *Hipposideros* 155:559 (Habersetzer J et al.)
–, frequency-place map in bat cochlea 157:671 (Vater M et al.), 687 (Kössl M, Vater M)
–, functional symmetry of *Mesocricetus* suprachiasmatic nuclei 154:221 (Davis FC, Gorski RA)
–, gustatory intensity discrimination in rat brain 155:271 (Maes FW, Erickson RP)
–, horizontal angle discrimination by *Eptesicus* 153A:321 (Simmons JA et al.)
–, inferior colliculus of house mouse 156:619, 637 (Ehret G, Moffat AJM)
–, lactate and glucose metabolism in *Phoca* 153B:275 (Davis RW)
–, landmark learning in *Meriones* 158:835 (Collett TS et al.)
–, light-sampling in *Glaucomys* photoentrainment 159:161 (DeCoursey PJ)
–, melatonin in guinea pig hippocampal slices 157:23 (Zeise ML, Semm P)
–, metabolic effects of temperature and dehydration in *Rhynchotragus* 152B:23 (Kamau JMZ, Maloiy GMO)
–, movement detection in rhinolophid and hipposiderid bats 159:403 (Link A et al.)
–, multiple circadian oscillators in *Mesocricetus* 159:187 (Mrosovsky N, Hallonquist JD)
–, neurophysiology of *Rhinolophus* NLL 160:395 (Metzner W, Radtke-Schuller S)
–, nipple-search behaviour in newborn rabbits 157:599 (Distel H, Hudson R)
–, – pheromone in rabbits 155:13 (Hudson R, Distel H)
–, ontogeny of *Hipposideros* echolocation sounds 158:247 (Habersetzer J, Marimuthu G)
–, – of neural responses in mouse olfactory bulb 157:789 (Schäfer HJ, Schmidt U)
–, pectoralis muscle of *Eptesicus* during hibernation 152B:97, 137 (Yacoe ME)
–, physiological properties of bat inner ear 157:587 (Henson OW et al.)
–, pineal N-acetyltransferase rhythm in rat 154:739 (Illnerová H, Vaněček J)
–, Purkinje cell responses to pineal indoles in guinea pigs 154:675 (Semm P, Vollrath L)
–, rabbit circadian activity 151A:359 (Nuboer JFW et al.)
–, response of *Pipistrellus* to moth sounds 156:831 (Surlykke A, Miller LA)
–, responses of *Pteronotus* inferior colliculus 157:797 (O'Neill WE)

Mammalia, SCN lesions and circadian rhythms in *Eutamias* 155:745 (Sato T, Kawamura H)
–,– lesions and circadian rhythms in *Mesocricetus* 156:803 (Pickard GE, Turek FW)
–, single units in *Pteronotus* inferior colliculus 153A:67 (Bodenhamer RD, Pollak GD)
–, solute uptake in mouse intestine 152B:105 (Karasov WH, Diamond JM)
–, spatial parameter recognition by echolocating *Desmodus* 155:67 (Joermann G)
–, spectral sensitivity of *Hipposideros* circadian rhythm 156:189 (Joshi D, Chandrashekaran MK)
–,– sensitivity of rabbit 151A:353 (Nuboer JFW, Moed PJ)
–,– sensitivity of *Spermophilus* cones 156:503 (Jacobs GH et al.)
–, superior collicular auditory neurons in *Eptesicus* 154:407 (Jen PH et al.)
–,– colliculus neurons of *Eptesicus* 154:253 (Poussin C, Schlegel P)
–, synchronization of *Spermophilus* circannual cycles 156:125 (Joy JE, Mrosovsky N)
–, target detection in *Eptesicus* 152A:447 (McCarty JK, Jen PH-S); 159:559 (Troest N, Møhl B)
–,– detection in *Rhinolophus* 153A:385 (Schnitzler H-U, Flieger E)
–,– discrimination by echolocating *Myotis* 152A:275 (Habersetzer J, Vogler B)
–, thermoregulation in kangaroo 153B:175 (Rübsamen U et al.)
–, threshold for rabbit vestibular nystagmus 160:585 (Lau CGY, Honrubia V)
–, use of visual landmarks by *Meriones* 160:109 (Collett TS)
Manduca, afferent-to-motoneuron synapses 160:315 (Weeks JC, Jacobs GA)
–, control of neurosecretion 158:445 (Copenhaver PF, Truman JW)
–, neural organization of ecdysis 155:407, 423 (Weeks JC, Truman JW)
–, pheromone-selective neurons in antennal lobes 160:553 (Christensen TA, Hildebrand JG)
–, pigment migration in compound eye 153A:59 (White RH et al.)
–, potassium transport in integument 153B:147 (Cornell JC, Jungreis AM)
–, preparatory behavior rhythm 155:521 (Truman JW)
–, somatotopic sensory projections 157:1 (Levine RB et al.)
–, steroid regulation of peptide action in CNS 157:423 (Morton DB, Truman JW)
Mantis, see *Archimantis*
Marsupialia, see *Aepyprymnus*, *Phascolarctos*
Marthasterias, chemoreception 157:537 (Valentinčič T)
Mauthner cell, startle circuits in zebrafish 155:813 (Eaton RC et al.)
Mealworm beetle, see *Tenebrio*
Mechanoreception, actions and interactions of locust proprioceptors 157:73, 83 (Bräunig P, Hustert R)
–, antennal feathered hairs in crayfish 154:45 (Bender M et al.)
–, bristle hairs in crickets 156:357 (Murphey RK), 369 (Johnson SE, Murphey RK), 381 (Murphey RK et al.)
–, calcium effects on mussel gill abfrontal cilia 155:445, 457 (Stommel EW)
–, cockroach tactile spine action potential adaptation 155:803 (French AS)
–, crayfish antennae as tactile organs 157:363 (Sandeman DC)
–, directional sensitivity of toad lateral line units 158:469 (Zittlau KE et al.)
–, epithelial action potentials in a tunicate 156:117 (Bone Q)
–, in newt embryos 152A:529 (Roberts A, Clarke JDW)
–, lateral inhibition of crayfish local interneuron 157:499 (Krenz WD, Reichert H)
–, lateral-line responses in clawed frog 160:667 (Elepfandt A, Wiedemer L)
–, leech swimming elicited by sensory cell stimulation 160:447 (Debski EA, Friesen WO)
–, lobster abdominal postural responses to tactile swimmeret stimulation 158:225 (Kotak VC, Page CH)
–, local interneurons mediating lateral inhibition in crayfish ganglion 151A:261 (Reichert H et al.)
–, octopus statocyst responses 156:403 (Williamson R, Budelmann BU)
–, properties of tail cilia in *Paramecium* 154:263 (Machemer-Röhnisch S, Machemer H), 273 (Machemer H, Machemer-Röhnisch S)
–, pyrethroid-induced activity in crayfish stretch receptor neuron 159:43 (Ruigt GSF et al.)
–, range fractionation in cricket cercal system 155:485, 495 (Shimozawa T, Kanou M)
–, receptor mechanism in eel neuromast hair cells 158:681 (Baumann M, Roth A)
–, responses of dorsal cells in lamprey brain 156:181 (Rovainen CM, Yan Q)
–, sensitivity of fish facial nerve 157:705 (Kiyohari S et al.)
–, sensory transduction in frog cutaneous receptors 157:657 (Watts RE, French AS)
–, single unit activity in cichlid fish lateral line 157:555 (Münz H)
–, slow-adapting receptor in pigeon skin 156:391 (Necker R)
–, somatotopic projections of sensory hairs in moth larvae 157:1 (Levine RB et al.)
–, strength-duration properties of cockroach rapidly adapting sensory neuron 159:757 (French AS)
–, tactile localisation in crayfish 157:607 (Zeil J et al.)
–, temperature effects on action potential encoding in cockroach tactile spin 156:817 (French AS)
–, thresholds of cricket cercal interneurons 154:357 (Kanou M, Shimozawa T)
–, water wave frequency discrimination in clawed frog 157:255 (Elepfandt A et al.)
–,– wave frequency recognition in clawed frogs 158:235 (Elepfandt A)
–,– wave localization by toad lateral line organs 154:773 (Elepfandt A)
–, waterborne vibration frequency coding interneurons in crayfish 158:751 (Plummer MR et al.)
–, wind-sensitive interneurones in mantis 159:773 (Boyan GS, Ball EE)
Mechanoreceptive units in axolotl lateral line 154:33 (Münz H et al.)
Mechanosensory control of beetle chasing behavior 158:405 (Bendele H)
– neurons, inhibition of crayfish – 153A:443 (Fricke RA, Kennedy D)
Medulla, directionally selective cells in locust – 159:841 (Osorio D)
–, respiratory pattern generation in lamprey – 158:91 (Russell DF)
Megaderma, acoustical cues in prey detection 160:509 (Marimuthu G, Neuweiler G)
Megaloptera, see *Corydalus*
Melanophores, effects of drugs and ions on pigment movements in fish – 154:121 (Collis CS)
Melatonin, effect on excitability of guinea pig hippocampal neurons 157:23 (Zeise ML, Semm P)
–, implant effects on finch activity rhythms 153A:413 (Fuchs JL)
–, light and temperature effects on lizard pineal – rhythms 157:57 (Underwood H)
Membrane, currents in a ciliate 158:111 (Pape H-C, Machemer H)
Memory, behavioral and molecular defects in a fly mutant 155:569 (Dudai Y et al.)
–, spatial and temporal, of sun movements in honeybee 160:621 (Dyer FC)
Meriones, landmark learning 158:835 (Collett TS et al.)
–, use of visual landmarks 160:109 (Collett TS)
Mesocricetus, circadian activity rhythms 153A:123 (Lees JG et al.)
–, effect of amiloride on gustation 160:281 (Herness MS)
–, multiple circadian oscillators 159:187 (Mrosovsky N, Hallonquist JD)
–, partial SCN lesions and circadian rhythms 156:803 (Pickard GE, Turek FW)
–, suprachiasmatic nuclei and circadian rhythms 154:221 (Davis FC, Gorski RA)
Metabolism, aerobic diving limits of seals 151B:171 (Kooyman GL et al.)
–, anaerobic succinate formation in sea mussel 153B:267 (Zwaan A de et al.)
–, bacterial symbionts in a gutless clam 152B:3 (Felbeck H)
–, effect of hypoxia in anurans 152B:125 (Withers PC, Hillman SS)
–, effects of temperature and dehydration in the dik-dik antelope 152B:23 (Kamau JMZ, Maloiy GMO)

–, energy, in molluscan ventricle 153B:159 (Ellington WR)
–, –, in the koala 153B:181 (Cork SJ et al.)
–, glutamate dehydrogenase isozymes from a Japanese beetle 151B:199 (Male KB, Storey KB)
–, lactate- and glucose –, in harbor seal 153B:275 (Davis RW)
–, net flux of amino acids in *Tetrahymena* 152B:27 (Davis JP, Stephens GC)
–, nocturnal hypothermia in willow tits 151B:109 (Reinertsen, RE, Haftorn S)
–, oxidative, in locust rectum 151B:191 (Chamberlin ME, Phillips JE)
–, preparatory adaptations for winter survival in cold hardy beetles 151B:225, 233 (Horwath KL, Duman JG)
–, protein –, in hibernating bat muscle and liver 152B:137 (Yacoe ME)
–, thermal dependence of locomotory energetics and aerobic capacity in Gila Monster 151B:119 (John-Alder HB et al.)
Methyltestosterone, effect on leucin transport in trout intestine 151B:247 (Habibi H et al.)
Microphones, biological, nerve cells as – in bushcrickets 158:647 (Rheinlaender J, Römer H)
Midbrain, auditory, sound coding in bird – 157:149 (Calford MB et al.)
–, –, temporal processing by treefrog – 157:763 (Rose GJ et al.)
–, electroreceptive, of an elasmobranch 158:43 (Schweitzer J)
Middle-ear muscle contractions, modulation of cochlear ganglion unit activity by – 157:643 (Oeckinghaus H)
Migration, dusk orientation in sparrows 159:107 (Able KP, Cherry JD)
Minnow, see *Phoxinus*
Mite, see *Tetranychus*
Mitral cells, repeated stimulation of – in goldfish olfactory bulb 158:563 (Schild D, Zippel HP)
Molecular defects in a fly memory mutant 155:569 (Dudai Y et al.)
Mollusca, afferent and efferent components in *Octopus* retina 151A:381 (Patterson JA, Silver SC)
–, anaerobic succinate formation in *Mytilus* 153B:267 (Zwaan A de et al.)
–, bacterial symbionts in *Solemya* 152B:3 (Felbeck H)
–, bag cell actions on *Aplysia* arteries 157:31 (Ligman SH, Brownell PH)
–, branchial ganglion function in opisthobranchs 156:35 (Kurokawa M, Kuwasawa K)
–, calcium and *Mytilus* gill ciliar movements 157:441, 451 (Stommel EW, Stephens RE)
–, – effects on *Mytilus* gill abfrontal cilia 155:445, 457 (Stommel EW)
–, cardioactive neuropeptides in *Aplysia* 156:659 (Lloyd PE et al.)
–, cerebral ganglia neurons of *Pleurobranchaea* 153A:533 (McClellan AD)
–, chemotactic behaviour in *Octopus* 158:375 (Chase R, Wells MJ)
–, circadian organization in *Aplysia* 153A:133 (Lickey ME et al.); 156:293 (Jordan WP et al.)
–, – pacemaker system in *Bulla* eye 155:365 (Block GD et al.), 379 (MacMahon DG et al.), 387 (Block GD, McMahon DG)
–, – period of *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
–, control and organization of *Aplysia* defensive responses 159:339 (Walters ET, Erickson MT)
–, efferent activity in *Octopus* statocyst nerves 158:125 (Williamson R)
–, energy metabolism in *Busycon* ventricle 153B:159 (Ellington WR)
–, eye of *Littorina* 152A:435 (Hamilton PV et al.)
–, feeding and cardiac activity in *Limax* 156:539 (Grega DS, Prior DJ)
–, – movements in *Navanax* 155:209 (Susswein AJ et al.)
–, food aversion learning in *Limax* 159:281 (Delaney K, Gelperin A)
–, gonadal role in *Limax* maturation 158:151 (McCrone EJ, Sokolove PG)
–, in vivo recordings of *Lymnaea* neuroendocrine cells 158:853 (Ter Maat A et al.)
–, innervation of *Aplysia* gill 157:483 (Kurokowa M, Kuwasawa K)
–, statocyst responses in *Octopus* 156:403 (Williamson R, Budelmann BU)
–, supralateral radular retractor muscles of *Planorbarius* 160:115 (Tattersall JEH, Brace RC)
Molting, role of Y-organ and cephalic gland in crayfish – 152B:91 (Jegla TC et al.)
Moon-light, artificial, effect on polychaete circalunar rhythm 159:569 (Franke H-D)
Mormyrids, hormonal control of sex differences in EOD 156:587 (Bass AH, Hopkins CD)
Mosquito, see *Aedes, Culiseta*
Moth, see *Antaea, Barathra, Bombyx, Creanotus, Cycnia, Deilephila, Empyreuma, Ephestia, Galleria, Hapigia, Heliotis, Lymantria, Manduca, Phalantoides, Samia, Thecophora, Theretra, Trichoplusia*
Moths, arctiid, influence of ultrasonic clicks on bat echolocation 156:831 (Surlykke A, Miller LA)
–, noctuoid, auditory receptor responses 154:441; 156:689; 159:115 (Pérez M, Coro F)
–, tympanate, reactions to bat echolocation signals 155:795 (Fullard JH)
Motion discrimination in toads 152A:241 (Burghagen H, Ewert J-P)
Motoneuron dendrites, local spikeless interaction of crayfish – 152A:335 (Nagayama T et al.)
Motoneurons, flight –, synaptic input to locust – 154:745 (Hedwig B, Pearson KG)
–, monosynaptic connections between hair afferents and – in larval moth 160:315 (Weeks JC, Jacobs GA)
–, pyloric, in crab 159:227 (Hooper SL et al.)
–, respiratory, inputs to – in lamprey brain 157:291 (Thompson KJ)
–, tongue-muscle-controlling, in toads 157:717 (Satou M et al.)
–, trochlear, responses in frog – 154:233 (Knöpfel T et al.)
Motor control in ciliate ciliary organelles 154:113 (Deitmer JW et al.)
– giant neurons, local inhibitor of crayfish – 158:69 (Kirk MD et al.)
– innervation, multimodal, of *Aplysia* gill 157:483 (Kurokawa M, Kuwasawa K)
– neurons, effect of scaphognathite – on crab ventilation 155:397 (DiCaprio RA, Fourtner CR)
– –, effect of tarsal joint receptors on locust – 160:341 (Laurent G)
– –, mesothoracic, activation by GIs in cockroach 154:633, 641 (Tobias ML, Ritzmann RE)
– – of fly neck motor system 160:205 (Strausfeld NJ et al.)
– – of moth flight muscles, auditory input to – 160:23 (Madsen BM, Miller LA)
– –, rami – in lobster swimmeret system 160:55 (Cattaert D, Clarac F)
– output during locust flight steering 158:653 (Thüring DA)
– pattern generators, oscillatory input to lobster – 154:473 (Robertson RM, Moulins M)
– patterns, buccal, in a gastropod 153A:533 (McClellan AD)
– –, during ecdysis in a moth 155:407, 423 (Weeks JC, Truman JW)
– – in intact and deafferented flight system of locusts 160:259 (Pearson KG, Wolf H), 269 (Wolf H, Pearson KG)
– – in locust flight 156:93 (Möhl B)
– – in newt embryos 152A:535 (Soffe SR et al.)
– –, ventilatory, in an aquatic insect 153A:542 (Kinnamon SC, Kammer AE)
– reflexes in tortoise 156:153 (Steffens H et al.)
– systems, controlling uropod steering and abdominal posture in crayfish 157:547 (Takahata M, Hisada M)
Mouse, circadian wake and activity onset timing 158:827 (Welsh DK et al.)
–, inferior colliculus 156:619, 637 (Ehret G, Moffat AJM)
–, method of intestinal solute uptake in vitro 152B:105 (Karasov WH, Diamond JM)
–, ontogeny of neural responses in olfactory bulb 157:789 (Schäfer HJ, Schmidt U)
Movement, detection during background motion in lizards 159:711 (Fleishman LJ)
–, neural control of leech heartbeat 154:367, 381 (Maranto AR, Calabrese RL), 393 (Calabrese RL, Maranto AR)
Musca, chemical noise in photoreceptor 156:339 (Minke B, Stephenson RS)
–, giant fibre pathway 158:529 (Bacon JP, Strausfeld NJ)

Musca, photodestruction in photoreceptors 154:153 (Zhu H, Kirschfeld K)
–, photoreceptors in dorsal marginal ommatidia 154:157 (Hardie RC)
Muscle contraction in cicada sound production 152A:183 (Young D, Josephson RK)
Muscle physiology, bat pectoralis muscle during hibernation 152B:97, 137 (Yacoe ME)
– –, closer apodeme tension receptors in crabs 157:355 (Hartman HB)
– –, common inhibitory neuron innervating crab leg muscles 158:665 (Rathmayer W, Bevengut M)
– –, conduction block of action potentials in orthopteran motor axon 154:431 (Theophilidis G)
– –, contractile performance of amphibian sartorius muscle 151B:127 (Renaud JM, Stevens ED)
– –, differently innervation of decapod pyloric region 159:227 (Hooper SL et al.)
– –, dual reflex motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
– –, electrical properties and transmitter output in shrimp muscle fibers 155:323 (Mellon DeF Jr)
– –, eurythermality of fish myofibrils 153B:167 (Sidell BD et al.)
– –, excitatory miniature currents in crayfish neuromuscular junctions 159:13 (Finger W, Martin C)
– –, GABA activated inhibitory chloride channel in crayfish muscle membranes 159:591 (Franke Ch et al.)
– –, glutamate-activated excitatory channel currents in crayfish muscle membranes 159:579 (Franke Ch et al.)
– –, immobilization effects on neuromuscular synapses in crayfish claws 157:461 (Pahapill PA et al.)
– –, inhibitory innervation of brachyuran limb musculature 156:305 (Wiens TJ, Rathmayer W)
– –, mechanical output of locust flight muscle 160:413 (Mizisin AP, Josephson RK)
– –, miniature end plate currents from fish extraocular muscle 155:649 (Macdonald JA, Balnave RJ)
– –, myogenicity in shrimp pyloric rhythm 158:489 (Meyrand P, Moulins M)
– –, neck flexion related activity of pigeon flight control muscle 153A:111 (Bilo D, Bilo A)
– –, neck motor system of blowfly 160:205 (Strausfeld NJ et al.), 225 (Milde JJ et al.)
– –, neuromuscular transmission in crab 152A:411 (Rathmayer W, Erxleben C)
– –, sturgeon pyruvate kinase 153B:247 (Guderley H et al.)
– –, temperature and neuromuscular transmission in a crab 153A:455 (Stephens PJ, Atwood HL)
Muscles, of fly neck motor system 160:205 (Strausfeld NJ et al.)
–, supralateral radular retractor, physiology and motor innervation in snail 160:115 (Tattersall JEH, Brace RC)
Mushroom bodies, current source-density in bee – 154:569 (Kaulen P et al.)
– –, processing of antennal information in bee 154:825 (Homberg U)
Mussel, see *Mytilus*
Mutant, behavioral and molecular defects in memory of fly – 155:569 (Dudai Y et al.)
–, *Drosophila* – sensitive to developmental temperature 151A:483 (Minke B)
Mutants, biological rhythm – in *Drosophila* 151A:545 (Jackson FR et al.)
–, metabolic mapping of brain activity in *Drosophila* – 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
Mygalopsis, hearing in the field 159:627 (Römer H, Bailey WJ)
–, physiology of auditory receptors 155:689 (Oldfield BP)
Myogenicity in shrimp pyloric rhythm 158:489 (Meyrand P, Moulins M)
Myotis, target discrimination during flight 152A:275 (Habersetzer J, Vogler B)
Mytilus, anaerobic succinate formation 153B:267 (Zwaan A de et al.)
–, calcium and movement of gill cilia 157:441, 451 (Stommel EW, Stephens RE)
–, – effects on gill abfrontal cilia 155:445, 457 (Stommel EW)

N

Na, effect on rod disc shedding in frogs 155:763 (Williams DS et al.)
Nasonia, courtship behavior 155:233 (Assem J van den et al.)
Navanax, feeding movements 155:209 (Susswein AJ et al.)
Navigation, role of atmospheric odours in pigeon – 156:737 (Benvenuti S, Wallraff HG)
–, time course of olfactory signal processing in pigeons 155:139 (Wallraff HG et al.)
Neck flexion, effect on flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
– motor system of blowfly 160:205 (Strausfeld NJ et al.), 225 (Milde JJ et al.)
Negaprion, spectral input to ganglion cells 156:579 (Cohen JL, Gruber SH)
Nephridial nerve cell in a leech 152A:455 (Wenning A)
Nerve, cutaneous, conduction velocities and fiber diameters in pigeon 154:817 (Necker R, Meinecke CC)
–, facial, mechanical and chemical sensitivity in fish – 157:705 (Kiyohari S et al.)
–, intestinal, unmyelinated fibres in chicken – 157:383 (Hodgkiss JP)
Nerves, cardio-regulator, in crab hearts 154:871 (Yazawa T, Kuwasawa K)
–, –, of hermit crabs 155:313 (Yazawa T, Kuwasawa K)
Nervous regulation in the heart of an isopod 154:883 (Kihara A, Kuwasawa K)
Nervous system, abdominal, postural interneurons in lobster 158:259, 273, 281 (Jones KA, Page CH)
– –, driver potentials in lobster cardiac ganglion neurons 151A:329 (Tazaki K, Cooke IM)
– –, giant interneurones in cockroach abdominal ganglion inhibited by a chordotonal organ 153A:377 (Bernard J et al.)
– –, monosynaptic connection in leech ganglia 156:65 (Johnsen J, Kleinhaus AL)
– –, morphology and response of giant interneurons to sound in bushcricket – 151A:449 (Shen J-X)
– –, Mauthner vs non-Mauthner startle circuits in zebrafish 155:813 (Eaton RC et al.)
– –, neurodepressing factor in insect haemolymph 152A:283 (Finlayson LH et al.)
– –, neuronal mechanisms of hydromedusan shadow reflex 159:201, 215 (Arkett SA, Spencer AN)
– –, pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)
– –, rate control in leech heartbeat oscillator 155:783 (Arbas EA, Calabrese RL)
– –, satellite – in locust head 160:69 (Bräunig P)
– –, stomatogastric, of mantis shrimp 159:521 (Tazaki K et al.)
– –, topography of crab cardiac ganglion 151A:311 (Tazaki K, Cooke IM)
– two types of information processing in insect cercal system 154:805 (Rozhkova GI et al.)
Neural coding model for sensory intensity discrimination 155:263 (Maes FW), 271 (Maes FW, Erickson RP)
– – of salt taste quality in fly 159:75 (Maes FW, Harms G), 89 (Maes GW, Ruifrok ACC)
– control of a cichlid social signal 160:89 (Muske LE, Fernald RD)
– – of insect ventilatory movements 153A:543 (Kinnamon SC, Kammer AE)
– – of isopod cardio-arterial valves 157:529 (Kihara A et al.)
– encoding of calling song temporal patterns in crickets 158:549 (Pollack GS)
– pathways in *Drosophila* 156:13 (Benshalom G, Dagan D)
Neurochemistry of GABAergic activities in locust CNS 157:343 (Breer H, Heilgenberg H)
Neurodepressing factor in insect haemolymph 152A:283 (Finlayson LH et al.)
Neuro-ethology of spider vibration sense 152A:361 (Hergenröder R, Barth FG)
Neurohemal network in locust head 160:69 (Bräunig P)
Neuromuscular junctions, spontaneous excitatory postsynaptic currents in crayfish – 159:13 (Finger W, Martin C)
– physiology of snail supralateral radular

retractor 160:115 (Tattersall JEH, Brace RC)
– synapses, immobilization and – in crayfish claws 157:461 (Pahapill PA et al.)
– transmission in crab muscle fibers 152A:411 (Rathmayer W, Erxleben C)
Neuron, bimodal, on crayfish walking legs 159:611 (Hatt H)
–, common inhibitory, in brachyuran limb musculature 156:305 (Wiens TJ, Rathmayer W)
–,– inhibitory, innervating crab leg muscle 158:665 (Rathmayer W, Bevengut M)
–, sensory, associated with leech nephridia 152A:455 (Wenning A)
–,–, strength-duration properties of cockroach – 159:757 (French AS)
Neuronal control of leech swimming 156:231 (Friesen WO)
Neurones, ionic bases of action potentials in flatworm – 155:197 (Keenan L, Koopowitz H)
Neurons, auditory, temporal selectivity in cricket brain 155:171 (Schildberger K)
–, ectopic, in crickets 156:381 (Murphey RK et al.)
–, in vivo visualization of arthropod – 158:625 (Reichert H, Krenz WD)
–, ocellar, passive cable properties of locust – 158:339 (Ammermüller J)
–,–, time- and voltage-dependent currents in locust – 159:363 (Ammermüller J, Zettler F)
–, second-order, interactions in locust median ocellus 159:97 (Simmons PJ)
–, triggering initiation of swimming activity in leech 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
Neuropeptides, cardioactive, in *Aplysia* 156:659 (Lloyd PE et al.)
Neurophysiology, cardioactive neuropeptides in *Aplysia* 156:659 (Lloyd PE et al.)
–, divalent cation action potentials in leech neurons 157:491 (Johansen J, Kleinhaus AL)
–, ionic basis of driver potentials in lobster cardiac ganglion units 157:845 (Berlind A)
– of tree frog communication 155:577 (Wilczynski W et al.)
–, velocity filter as system for recording 157:823 (Koch UT, Brunner M)
Neurosecretion, regulation of eclosion hormone cells in moth 158:445 (Copenhaver PF, Truman JW)
Neurosecretory cells, in vivo recordings of snail – 158:853 (Ter Maat A et al.)
Newt, see *Notophthalmus*, *Triturus*
Nipple-search behaviour, olfactory and tactile modalities in rabbit – 157:599 (Distel H, Hudson R)
Noctilio, auditory sensitivity 155:91 (Wenstrup JJ)
–, echolocation of moving targets 155:75 (Wenstrup JJ, Suthers RA)
–,– performance 156:447, 457, 471 (Roverud RC, Grinnell AD)
Noemacheilus, melanophore physiology 154:121 (Collis CS)
Noise, chemically induced, in fly photoreceptors 156:339 (Minke B, Stephenson RS)
Notonecta, plunge reaction 155:319 (Schwind R)
–, polarization vision 154:43 (Schwind R)
–, visual pigments in compound eye 154:341 (Schwind R et al.)
Notophthalmus, distribution of leukocytes 153A:81 (Bennett MF, Daigle KR)
–, magnetic compass orientation 158:103 (Phillips JB)
–, stress effects on blood during regeneration 159:823 (Bennett MF)
Notoplana, neuronal action potentials 155:197 (Keenan L, Koopowitz H)
Nucleus ambiguus, control of bat vocalization 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
– basalis prosencephali, sensory inputs to feeding–pecking centre in pigeon 159:33 (Schall U, Delius JD)
– isthmi, functional relationship to optic tectum in teleosteans 152A:545 (Williams B et al.)
Nyctalus, echolocation 152A:421 (Vogler B, Neuweiler G)
Nystagmus, vestibular threshold for rabbit – 160:585 (Lau CGY, Honrubia V)

O

Ocellus, GABAergic action in S-neurons of locust – 157:799 (Ammermüller J, Weiler R)
–, interactions by large second-order neurons in locust – 159:97 (Simmons PJ)
–, passive cable properties of locust L-neurons 158:339 (Ammermüller J)
–, spiking L-neurons in honeybee – 155:151 (Milde JJ, Homberg U)
–, structure and signals of L-neurons in bee 154:683 (Milde JJ)
–, time- and voltage-dependent currents in L-neurones 159:363 (Ammermüller J, Zettler F)
Octopus, afferent and efferent components in retina 151A:381 (Patterson JA, Silver SC)
–, chemotactic behaviour 158:375 (Chase R, Wells MJ)
–, efferent activity in statocyst nerves 158:125 (Williamson R)
–, statocyst responses 156:403 (Williamson R, Budelmann BU)
Ocybadistes, resolving power of diurnal superposition eye 154:515 (Land MF)
Odonata, see *Aeshna*, *Anax*, *Sympetrum*
Odorant stimulation of secretory and neural processes in salamander olfactory mucosa 160:155 (Getchell ML et al.)
Odors, heritable, discrimination by honeybees 159:251 (Getz WM et al.)
Odours, athmospheric, role in pigeon navigation 156:737 (Benvenuti S, Wallraff HG)
Oestradiol, effect on leucin transport in trout intestine 151B:247 (Habibi H et al.)
Oikopleura, epithelial action potentials 156:117 (Bone Q)
Oil droplets in penguin eye 156:71 (Bowmaker JK, Martin GR)
Oil bird, see *Steatornis*
Olfaction, modulation of alarm pheromone perception in honeybee 160:613 (Robinson GE)
–, responses of moth receptor neurons to pheromone blends 156:747 (O'Connell RJ)
–, specialization of receptors in bark beetle and its predator 157:335 (Tømmerås BÅ)
Olfactory basis of tadpole kin recognition 156:565 (Waldman B)
– bulb ontogeny of neural responses in mouse 157:789 (Schäfer HJ, Schmidt U)
–– potentials in the carp 152A:319 (Satou M et al.)
–– , repeated stimulation of goldfish mitral cells 158:563 (Schild D, Zippel HP)
– cells, ATP-sensitive, in lobster 158:331 (Carr WES et al.)
–– , purinergic, of crustaceans 155:341 (Derby CD et al.)
– coding mechanisms in insect receptors 152A:459 (Tichy H, Loftus R)
– discrimination in a fly 152A:373 (Borst A)
– glands, β-adrenergic regulation of acinar cell secretion in salamander 155:435 (Getchell ML, Getchell TV)
– L-serine receptor in salmon 159:61 (Rehnberg BG, Schreck CB)
– maps, homing pigeons can build up – after section of anterior commissure 465 (Foà A et al.)
– modalities in rabbit nipple-search behaviour 157:599 (Distel H, Hudson R)
– mucosa, secretory and neural processes in salamander – 160:155 (Getchell ML et al.)
– responses of salamanders to airborne and waterborne stimuli 158:479 (Arzt AH et al.)
– sensitivity of honeybees 160:239 (Getz WM, Smith KB)
– signals, time course of processing in pigeon navigation 155:139 (Wallraff HG et al.)
Ommatidium, structural organization in dragonfly ventral compound eye 151A:285 (Armett-Kibel C, Meinertzhagen IA)
Omocestus, role of interneurons in stridulation 158:413, 429 (Hedwig B)
–, song recognition and song pattern 153A:393 (Skovmand O, Pedersen SB)
Oncorhynchus, magnetite particles in dermethmoid tissue 157:375 (Kirschvink JL et al.)
–, olfactory serine receptor 159:61 (Rehnberg BG, Schreck CB)

Ontogeny of bat sounds 158:247 (Habersetzer J, Marimuthu G)
– of neural responses in mouse olfactory bulb 157:789 (Schäfer HJ, Schmidt U)
Ophthalmoscope, measuring resolving power of diurnal superposition eyes 154:515 (Land MF)
Opisthobranchs, see *Aplysia, Dolabella*
Opsin, reversible phosphorylation in blowfly retina 155:39 (Paulsen R, Bentrop J)
Optic tectum, binocularly driven neurons in frog – 157:47 (Gaillard F)
– –, functional relationship to nucleus isthmi in teleosteans 152A:545 (Williams B et al.)
– –, neurons responding to moving visual stimuli in frog – 159:721 (Matsumoto N et al.)
– tract, effect on cockroach circadian system 153A:353 (Page TL)
Optical parameters of euphausiid eyes 154:307 (Hiller-Adams P, Case JF)
Optics of blowfly eyes 156:525 (Land MF, Eckert H)
–, schematic, of starling eye 159:545 (Martin GR)
Optokinetic sensitivity, distribution over crab eyes 160:127 (Nalbach H-O, Nalbach G)
Optomotor reflexes in walking beetles 156:395 (Zanker JM, Collett TS)
Orconectes, pyridine-sensitive neurons 152A:395 (Hatt H)
–, role of Y-organ and cephalic gland in molt 152B:91 (Jegla TC et al.)
Orientation, antennal movements in crayfish tactile localisation 157:607 (Zeil J et al.)
–, bat echolocation under clutter interference 152A:447 (McCarty JK, Jen PH-S)
–, bees learn colours of landmarks 159:69 (Cheng K et al.)
–, celestial, in honeybees 155:605 (Rossel S, Wehner R)
–, centrophobism in *Drosophila* 156:319, 329 (Götz KG, Biesinger R)
–, chemotactic behavior of octopus 158:375 (Chase R, Wells MJ)
–, compass movement and polarotaxis in lizards 156:547 (Adler K, Phillips JB)
–, compass – vs piloting by familiar landmarks in homing pigeons 153A:55 (Füller E et al.)
–, cricket phonotaxis after killing of acoustic interneurons 154:795 (Atkins G et al.)
–, dance – in Asian honey bee 157:183 (Dyer FC)
–, deflector effect and olfaction in homing pigeons 159:465 (Foà A et al.)
–, directional components in pigeon – 159:143 (Wallraff HG)
–, discrimination of spatial intervals by blind cave fish 159:701 (Hassan El-S)
–, dusk – in night migrants 159:107 (Able KP, Cherry JD)
–, echolocation behavior in bats 152A:421 (Vogler B, Neuweiler G); 157:39 (Schnitzler H-U et al.)
–, – of moving targets by a bat 155:75 (Wenstrup JJ, Suthers RA)
–, – performance in a CF/FM bat 156:447, 457, 471 (Roverud RC, Grinnell AD)
–, edge fixation and negative phototaxis in gypsy moth 154:493 (Preiss R, Kramer E)
–, effects of turning tendencies and gravitational stimuli on weevil – 159:377 (Wendler G, Scharstein H)
–, fast component threshold for rabbit vestibular nystagmus 160:585 (Lau CGY, Honrubia V)
–, fixation behavior in a fly 155:661 (Coombe PE)
–, foraging and echolocation in Indian bats 155:559 (Habersetzer J et al.)
–, frequency and temporal pattern-dependent cricket phonotaxis 154:13 (Pollack GS et al.)
–, gravity as an guide during spider web-construction 159:279 (Vollrath F)
–, interaction of sensory inputs to spider legs 152A:361 (Hergenröder R, Barth FG)
–, landmark learning and visuo-spatial memories in gerbils 158:835 (Collett TS et al.)
–, – learning in bees 151A:521 (Cartwright BA, Collett TS)
–, light responses of bees in magnetic field 154:865 (Leucht T)
–, magnetic compass – in newts 158:103 (Phillips JB)
–, – field discrimination in tuna 155:673 (Walker MM)
–, memory and sun compensation in honeybee 160:621 (Dyer FC)
–, navigation of juvenile alligators 154:649 (Rodda GH)
–, obstacle localization in blind cave fish 157:837 (Teyke T)
–, of male granary beetles to female pheromone 158:729 (Tobin TR, Bell WJ)
–, phonotactic specificity in crickets 157:223 (Doolan JM, Pollack GS)
–, phonotaxis and song harmonic content in crickets 158:583 (Latimer W, Lewis DB)
–, – by hybrid treefrogs 154:319 (Doherty JA, Gerhardt HC)
–, – in crickets 152A:257 (Schmitz B et al.)
–, – in crickets 153A:509 (Stout JF et al.)
–, – in crickets 156:165 (Schmitz B)
–, – in crickets 157:279 (Doherty JA)
–, – in flying crickets 159:413, 441 (Nolen TG, Hoy RR)
–, – in painted reed frog 154:189 (Passmore NI et al.)
–, polarization pattern analysis by bees 154:607 (Rossel S, Wehner R)
–, preferred compass direction in pigeon homing 157:469 (Wiltschko R, Wiltschko R)
–, prey orienting in frogs 156:775 (Grobstein P et al.)
–, prostaglandin-induced mating call phonotaxis in toad 156:823 (Schmidt RS)
–, site simulation by odours in pigeon navigation 156:737 (Benvenuti S, Wallraff HG)
–, slope perception in a land hermit crab 154:511 (Dunham DW, Schöne H)
–, solar direction finding in sandhoppers 151:435 (Pardi L, Scapini F); 156:729 (Scapini F et al.); 157:433 (Scapini F, Buiatti M)
–, spatial parameter recognition in echolocating bat 155:67 (Joermann G)
–, target discrimination by echolocating bat 152A:275 (Habersetzer J, Vogler B)
–, time course of signal processing in pigeon navigation 155:139 (Wallraff HG et al.)
–, to polarized skylight in desert ants 158:145 (Fent K)
–, trade-off phenomena in cricket phonotaxis 156:787 (Doherty JA)
–, use of visual landmarks by gerbils 160:109 (Collett TS)
–, visual edge fixation and skototaxis in mealworm beetle 160:543 (Varjú D)
–, water wave localization by *Xenopus* ventral lateral line 154:773 (Elepfandt A)
Ornithodoros, vitellogenin and vitellin 152B:13 (Chinzei Y et al.)
Orthoptera, auditory fiber projections 151A:389 (Oldfield BP)
Orthoptera, see also bushcricket, cricket, grasshopper, locust, mantis, stick insect
Oryctolagus, see rabbit
Oscillator, call – in treefrogs 156:223 (Zelick R, Narins PM)
–, morning – in rat pineal rhythm 154:739 (Illnerová H, Vaněček J)
– neurons in the leech 156:231 (Friesen WO)
–, two – model of mosquito flight rhythms 155:1 (Clopton JR)
Oscillators, circadian, in avian pineal gland 154:435 (Takahashi JS, Menaker M)
Oscillatory input to lobster motor pattern generators 154:473 (Robertson RM, Moulins M)
Osmoregulation, potassium transport in insect integument 153B:147 (Cornell JC, Jungreis AM)
–, role of antidiuretic hormone in dog and duck 151B:241 (Gray DA, Simon E)
–, water relations in terrestrial isopods 151B:155 (Quinlan MC, Hadley NF)
Ostrinia, geographic variation in photoperiodism 156:653 (Takeda M, Skopik SD)
Ouabain, effect on rod disc shedding 155:763 (Williams DS et al.)
Oviposition, effects of pheromone disinhibition in queen fire ants 153A:467 (Fletcher DJC, Blum MS)
Owl eyes, optical properties 151A:277 (Murphy CJ, Howland HC)
Oxygen affinity, adrenergic regulation of trout blood – 152B:67 (Nikinmaa M)
– consumption of insect recta 153B:223 (Sell D, Houlihan DF)
– uptake, effects of hypercapnia in trout 151B:185 (Thomas S et al.)

P

Pacemaker system, circadian, in snail eye 155:365 (Block GD et al.), 379 (McMahon DG et al.), 387 (Block GD, McMahon DG)

Pachygrapsus, temperature and neuromuscular physiology 153A:455 (Stephens PJ, Atwood HL)

Pacifastacus, coordination of swimmeret rhythms 158:215 (Paul DH, Mulloney B)

–, nonspiking local interneurons 156:763 (Waldrop B, Glantz R)

–, swimmeret local interneurons 156:489 (Paul DH, Mulloney B)

Pagothenia, central vestibular physiology 160:289 (Montgomery JC, McVean AR)

–, motor systems 154:241 (Montgomery JC, Macdonald JA)

Palaemon, myogenicity in pyloric rhythm 158:489 (Meyrand P, Moulins M)

Palaemonetes, AMP as chemoattractant 153A:47 (Carr WES, Thompson HW)

Palinurus, antennal responses to leg movements 155:351 (Neil DM et al.)

Panulirus, ATP-sensitive olfactory cells 158:331 (Carr WES et al.)

–, chemical sensitivity of aesthetasc hairs 158:59 (Spencer M)

–, purinergic olfactory cells 155:341 (Derby CD et al.)

–, stomatogastric IV neurons in brain 154:27 (Claiborne BJ, Selverston AI)

Papilio, inhibition in the retina 152A:169 (Matić T)

Paragrapsus, six spectral sensitivity classes in visual interneurons 157:235 (Knight D, Leggett LMW)

Paramecium, chemoreception 160:525, 537 (Preston RR, Van Houten JL)

–, ciliary reversal 152A:385 (Hildebrand E, Dryl S)

–, folate binding and chemoreception 155:113 (Schulz S et al.)

–, heat responses 153A:39 (Hennessey TM et al.)

–, mechanoreceptor properties in tail cilia 154:263 (Machemer-Röhnisch S, Machemer H), 273 (Machemer H, Machemer-Röhnisch S)

Parus, auditory resolution in azimuth 158:383 (Klump BM et al)

–, nocturnal hypothermia and metabolism 151B:109 (Reinertsen RE, Haftorn S)

Passer, serotonin and circadian rhythms 156:145 (Cassone VM, Menaker M)

Pattern generator, central, for lamprey locomotion 160:181 (Cohen AH)

– –, central, of leech heartbeat 155:783 (Arbas EA, Calabrese RL)

– –, pyloric, in lobster 153A:17 (Rezer E, Moulins M)

Pekin duck, see duck

Penguin, see *Spheniscus*

Peptide, cardioactive, in *Aplysia* 156:659 (Lloyd PE et al.)

Peptides in crab sinus gland 153B:191 (Stuenkel EL), 153B:207 (Newcomb RW)

Perca, electrophysiology of nucleus isthmi 152A:545 (Williams B et al.)

Perch, see *Cichlosoma*

Perilymph movements, modulation of cochlear ganglion unit activity by – 157:643 (Oeckinghaus H)

Periplaneta, chordotonal organ inhibits giant interneurones 153A:377 (Bernard J et al.)

–, compensation for altered cercal position 155:31 (Comer C, Camhi JM)

–, escape turning behavior 160:571 (Comer CM, Dowd JP)

–, flight maintenance mechanism 155:697 (Yagodin SV, Kovbasa SI)

–, giant interneuron activation of motor neurons 154:633, 641 (Tobias ML, Ritzmann RE)

–, rectal oxygen consumption 153B:223 (Sell D, Houlihan DF)

–, sex pheromone components 152A:309 (Sass H)

–, strength-duration properties of sensory neuron 159:757 (French AS)

–, tactile spine action potential adaptation 155:803 (French AS)

–, temperature effects on action potential encoding 156:817 (French AS)

–, thoracic interneurons in giant interneuron pathways 159:639 (Ritzmann RE, Pollack AJ)

Petromyzon, catecholamines 152B:35 (Dashow L, Epple A)

–, electroreceptors 152A:209 (Bodznik D, Preston DG)

–, non-ampullary electroreceptors 158:9 (Ronan MC, Bodznick D)

Phaeophilacris, air vortex rings as communication signals 160:79 (Heinzel H-G, Dambach M)

Phalanoides, resolving power of diurnal superposition eye 154:515 (Land MF)

Pharyngeal movements during feeding in a gastropod 155:209 (Susswein AJ et al.)

Phascolarctos, digestion 152B:43 (Cork SJ, Warner ACI), 152B:131 (Cork SJ, Hume ID), 153B:181 (Cork SJ et al.)

Pheromone, alarm, modulation of perception in honeybee 160:613 (Robinson GE)

– biosynthesis, regulation by alkaloids in moth 157:569 (Boppré M, Schneider D)

– blends, responses of moth olfactory cells to – 156:747 (O'Connell RJ)

–, chemo-orientation of beetles to – 158:729 (Tobin TR, Bell WJ)

– components of female cockroach 152A:309 (Sass H)

–, inhibitory, in queen fire ant 153A:467 (Fletcher DJC, Blum MS)

–, nipple-search, in rabbits 155:13 (Hudson R, Distel H)

–, olfactory responses of goldfish to 17α,20β-dihydroxy-4-pregnen-3-one 160:305 (Sorensen PW et al.)

–, oviposition-deterrent, responses of fly chemoreceptors to – 154:143 (Bowdan E)

Pheromones, beetle olfactory cells specialized to – 157:335 (Tømmerås BÅ)

–, male-specific projection neurons in moth antennal lobes selective for – 160:553 (Christensen TA, Hildebrand JG)

–, queen control over production of sexuals in fire ants 159:741 (Vargo EL, Fletcher DJC)

Pheromone-specific chemoreceptors in bark beetles 154:591 (Mustaparta H et al.)

Pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)

Phoca, lactate and glucose metabolism 153B:275 (Davis RW)

Phocoena, evoked potentials of auditory cortex 158:705 (Popov VV et al.)

Phodopus, circadian organization 159:7 (Puchalski W, Lynch GR)

–, seasonal changes of circadian NAT activity rhythm 160:593 (Steinlechner S et al.)

Phonotaxis, attractiveness of cricket male calling song 153A:509 (Stout JF et al.)

– by crickets after killing of acoustic interneurons 154:795 (Atkins G et al.)

– by hybrid treefrogs 154:319 (Doherty JA, Gerhardt HC)

–, choice and non-choice paradigms in cricket – 157:279 (Doherty JA)

–, discrimination of calling song models in crickets 158:549 (Pollack GS)

–, frequency and temporal pattern-dependent, of crickets 154:13 (Pollack GS et al.)

– in crickets after ear occlusion 152A:257 (Schmitz B et al.)

–, in flying crickets 159:423, 441 (Nolen TG, Hoy RR)

–, in painted reed frog 154:189 (Passmore NI et al.)

–, importance of tympana in cricket directional hearing 156:165 (Schmitz B)

–, prostaglandin-induced, in toad 156:823 (Schmidt RS)

–, specificity in cricket – 157:223 (Doolan JM, Pollack GS)

–, temporal properties eliciting cricket – 156:787 (Doherty JA)

Phormia, directional proboscis extension 160:367 (Yetman S, Pollack GS)

–, inhibitory system regulating feeding behavior 158:713 (Bowdan E, Dethier VG)

Phosphate transport, renal, in freshwater turtle 152B:117 (Laverty G)

Phosphatidylinositol phosphorylation in gill cilia 157:441 (Stommel EW, Stephens RE)

Phosphoenolpyruvate carboxykinase, role in mussel anaerobic metabolism 153B:267 (Zwaan A de et al.)

Phosphorylation, reversible, of opsin in fly retina 155:39 (Paulsen R, Bentrop J)

Photodestruction, protection against – by carotenoid pigments 154:153 (Zhu H, Kirschfeld K)

Photoperiodic adjustment in hamster 159:7 (Puchalski W, Lynch GR)

Photoperiodic, counter in spider mite 160:421 (Veerman A, Vaz Nunes M)
– diapause, geographical variation in *Drosophila* – 159:123 (Lankinen P)
Photopigment, rhodopsin-like, role in quail photoperiodic response 157:519 (Foster RG, Follett BK)
Photoreception in lamprey pineal organ 159:1 (Tamotsu S, Morita Y)
Photoreceptor, influence of extracellular calcium on fly – 156:53 (Hochstrate P, Hamdorf K)
Photoreceptor membrane, dichroism in a crab 154:597 (Doujak FE)
Photoreceptors, angular sensitivity of blowfly – 155:239 (Smakman JGJ et al.); 160:501 (Smakman JGJ, Stavenga DG)
–, authophagy and disk-shedding in rat retina 156:669 (Remé C et al.)
–, chemically induced noise in fly – 156:339 (Minke B, Stephenson RS)
–, cone mechanisms and polarized light detection in fish 160:459 (Hawryshyn CW, McFarland WN)
–, contribution of fly colour receptors to motor output 157:417 (Kirschfeld K, Vogt K)
–, diurnal changes in sensitivity of crayfish – 158:573 (Bryceson KP)
–, effect of Na, ouabain and strophanthidin on rod disc shedding 155:763 (Williams DS et al.)
–, electron microprobe analysis of honeybee drone – 156:213 (Coles JA, Rick R)
–, electrophysiology of – in ant compound eye 158:1 (Labhart T)
–, four spectral classes of cone in birds 159:473 (Chen D-M, Goldsmith TH)
–, GABAergic feedback in locust ocellus 157:779 (Ammermüller J, Weiler R)
–, morphological and spectral characteristics of roach – 159:859 (Downing JEG et al.)
–, neuro-ommatidial, electrical coupling of fly – 158:795 (Hateren JH van)
–, nonlinearities during photon transduction in locust – 156:645 (French AS, Kuster JE)
–, non-local interactions in fly – 154:175 (Minke B, Kirschfeld K)
–, optical angular sensitivity of fly – 154:761 (Hateren JH van)
–, polarization sensitivity of crayfish – and their terminals 156:315 (Sabra R, Glantz RM)
–, potassium concentration changes in leech – 157:199 (Walz B)
–, properties of R7 and R8 in fly dorsal marginal ommatidia 154:157 (Hardie RC)
–, protection against photodestruction in fly – 154:153 (Zhu H, Kirschfeld K)
–, quantitative electron probe microanalysis of leech – 154:81 (Walz B, Somlyo AP)
–, renewal of visual pigment in fly – 154:535 (Schwemer J)
–, responses after intense light adaptation in crayfish – 158:35 (Cummins DR, Goldsmith TH)
–, rhodopsin-like photopigment in quail – 157:519 (Foster RG, Follett BK)
–, spectral sensitivity of bat – responsible for circadian activity rhythm 156:189 (Joshi D, Chandrashekaran MK)
–, – sensitivity of ground squirrel cones 156:503 (Jacobs GH et al.)
–, – sensitivity of light induced respiratory activity in fly – 160:195 (Tinbergen J, Stavenga DG)
–, synapses in bee – after chromatic deprivation 151A:477 (Hertel H)
–, visual pigments in lamprey – 154:279 (Govardovskii VI, Lychakov DV)
Photosensitivity, neuronal mechanisms of hydromedusan shadow reflex 159:201, 215 (Arkett SA, Spencer AN)
–, of minnow pineal cells 159:325 (Nakamura T et al.)
Phototaxis, and colour vision in honeybee 157:311 (Menzel R, Greggers U)
–, negative, in walking gypsy moth 154:493 (Preiss R, Kramer E)
Phototransduction, dynamics in insects 154:707 (Howard J et al.)
–, in locust photoreceptors 156:645 (French AS, Kuster JE)
Phoxinus, photosensitive pineal cells 159:325 (Nakamura T et al.)
Phyllobates, acoustic communication 160:693 (Zimmermann E, Rahmann H)
Phylogeny of vertebrate brain gangliosides 151B:215 (Rahmann H, Hilbig R)
Pieris, light-sensitive phase in diapause termination 155:161 (Brunnarius J, Dumortier B)
–, spectral sensitivity 160:247 (Steiner A et al.)
–, visual processing of color stimuli 160:645 (Scherer C, Kolb G)
Pigeon, circadian organization 154:59 (Ebihara S et al.)
–, compass orientation 153A:55 (Füller E et al.)
–, corneal accommodation 160:375 (Schaeffel F, Howland HC)
–, cutaneous nerve fibers 154:817 (Necker R, Meinecke CC)
–, deflector effect and olfaction 159:465 (Foà A et al.)
–, directional components in orientation 159:143 (Wallraff HG)
–, magnetic cells in visual system 159:619 (Semm P, Demaine C)
–, mechanoreceptors in feathered skin 156:391 (Necker R)
–, neck flexion and flight control muscle activity 153A:111 (Bilo D, Bilo A)
–, neural basis of magnetic compass 155:283 (Semm P et al.)
–, preferred compass direction in homing 157:469 (Wiltschko R, Wiltschko W)
–, Purkinje cell responses to pineal indoles 154:675 (Semm P, Vollrath L)
–, sensory inputs to nucleus basalis prosencephali 159:33 (Schall U, Delius JD)
–, site simulation by odours 156:737 (Benvenuti S, Wallraff HG)
–, temperature effects on auditory fibers 156:209 (Schermuly L, Klinke R)
–, time course of signal processing in navigation 155:139 (Wallraff HG et al.)
–, vibrational sensitivity 152A:251 (Shen J-X)
Pigment migration, spectral sensitivity of – in moth eye 153A:59 (White RH et al.)
– –, triggered by light near the cornea, in moth eye 160:355 (Land MF)
– –, triggering in moth eye 159:55 (Weyrauther E)
– –, ultraviolet and blue induced, in moth retina 159:353 (Hamdorf K et al.)
Pigment screening, mobility and electric charge in moth eye 157:667 (Weyrauther E, Seitz G)
–, visual, phosphorylation of opsin in blowfly retina 155:39 (Paulsen R, Bentrop J)
Pigmentation of deep-sea fish eye lens 159:791 (McFall-Ngai M et al.)
Pigments, melanophore physiology in stoneloach 154:121 (Collis CS)
Pineal eye, functioning in newt embryos 152A:529 (Roberts A, Clarke JDW)
– gland, circadian oscillators in isolated avian – 154:435 (Takahashi JS, Menaker M)
– indoleamines, role in bird and mammal cerebellum 154:675 (Semm P, Vollrath L)
– melatonin rhythms in a lizard 157:57 (Underwood H)
– N-acetyltransferase, circadian rhythm in inducibility of – in rat 154:739 (Illnerová H, Vaněček J)
– –, seasonal changes in hamster – activity 160:593 (Steinlechner S et al.)
– organ, intracellular responses of minnow – 159:325 (Nakamura T et al.)
– organ, role in pigeon circadian organization 154:59 (Ebihara S et al.)
– –, photoreception in lamprey larval and adult – 159:1 (Tamotsu S, Morita Y)
Pinealectomy, effect on finch activity rhythms 153A:413 (Fuchs JL)
Pipistrellus, response to moth ultrasonic clicks 156:831 (Surlykke A, Miller LA)
Pisces, acoustic communication in *Pollimyrus* 159:297 (Crawford JD et al.)
–, activity in *Carassius* torus longitudinalis 155:333 (Northmore DPM)
–, – of *Sarotherodon* lateral line units 157:555 (Münz H)
–, androgen effects upon *Sternopygus* electroreceptor tuning 158:301 (Keller CH et al.)
–, androgen-binding pathways in *Brienomyrus* 159:535 (Bass AH et al.)
–, androgens and electroreceptor tuning in *Brienomyrus* 155:713 (Bass AH, Hopkins CD)
–, auditory response of *Ictalurus* saccular neurons 155:615 (Moeng RS et al.)
–, – sensitivity of *Gnathonemus* 155:753 (McCormick CA, Popper AN)
–, blood acid-base balance in the trout 152B:53 (Thomas S)

–, – oxygen affinity in *Salmo* 152B:67 (Nikinmaa M)
–, central auditory pathways of *Cyprinus* 156:267 (Echteler SM)
–, – vestibular physiology in *Pagothenia* 160:289 (Montgomery JC, McVean AR)
–, chemosensory and mechanosensory fibers in *Fugu* facial nerve 157:705 (Kiyohari S et al.)
–, control of *Haplochromis* social signal 160:89, 99 (Muske LE, Fernald RD)
–, detection of DC electric dipoles by *Ginglymostoma* 155:681 (Johnson CS et al.)
–, diencephalic electrosensory nuclei in *Platyrhinoidis* 153A:331 (Schweitzer J)
–, discrimination of spatial intervals by *Anoptichthys* 159:701 (Hassan El-S)
–, effect of rest deprivation on motor activity 157:817 (Tobler I, Borbély AA)
–, electrophysiology of teleostean nucleus isthmi 152A:545 (Williams B et al.)
–, electroreceptive midbrain of *Platyrhinoidis* 158:43 (Schweitzer J)
–, electroreceptor tuning in *Sternopygus* 153A:477 (Zakon HH, Meyer JH)
–, electrosensory neurons in *Apteronotus* 154:199 (Saunders J, Bastian J)
–, – system of *Platyrhinoidis* 155:103 (Montgomery JC)
–, eurythermality of *Fundulus* myofibrils 153B:167 (Sidell BD et al.)
–, evolution of the jamming avoidance response in electric fish 160:491 (Rose G et al.)
–, eye lens pigmentation in *Argyropelecus* 159:791 (McFall-Ngai M et al.)
–, – movement dynamics in *Cephaloscyllium* 158:723 (Paulin MG, Montgomery JC)
–, – movements in *Haplochromis* 156:199 (Fernald RD)
–, fin ray chemoreception in *Prionotus* 154:167 (Silver WL, Finger TE)
–, gain control in *Apteronotus* electrosensory system 158:505 (Bastian J)
–, gating of sensory information in *Eigenmannia* 159:311 (Heiligenberg W, Rose G)
–, gustatory responses of *Salmo* to amino acids 153A:423 (Marui T et al.)
–, – specificity in *Cyprinus* 153A:299 (Marui T et al.)
–, hormonal control of sex differences in EOD of mormyrids 156:587 (Bass AH, Hopkins CD)
–, hormone-induced EOD changes and electroreceptor tuning in *Apteronotus* 160:385 (Meyer JH et al.)
–, hypercapnia in *Salmo* 151B:185 (Thomas S et al.)
–, impulse conduction by primary afferents from *Gnathonemus* electroreceptors 157:15 (Slesinger P, Bell CC)
–, intestinal sugar transport 151B:163 (Groot JA et al.), 152B:79 (Ferraris RP, Ahearn GA)
–, – transport in temperature-acclimated *Carassius* 151B:163 (Groot JA et al.)
–, jamming avoidance response processing in *Eigenmannia* brain 154:895 (Bastian J, Yuthas J)
–, localization of obstacles by *Anoptichthys* 157:837 (Teyke T)
–, magnetic field discrimination in *Thunnus* 155:673 (Walker MM)
–, magnetite particles in *Oncorhynchus* tissue 157:375 (Kirschvink JL et al.)
–, Mauthner and non-Mauthner startle circuits in *Brachydanio* 155:813 (Eaton RC et al.)
–, melanophore physiology in *Noemacheilus* 154:121 (Collis CS)
–, motor system in antarctic fishes 154:241 (Montgomery JCV, Macdonald JA)
–, muscle pyruvate kinase in *Acipenser* 153B:247 (Guderley H et al.)
–, neural coding of EOD difference frequencies in *Eigenmannia* 158:613 (Rose G, Heiligenberg W)
–, – correlates of novelty detection in electric fish 159:191 (Grau HJ, Bastian J)
–, olfactory bulb potentials in *Cyprinus* 152A:319 (Satou M et al.)
–, – responses to steroidal pheromones in *Carassius* 160:305 (Sorensen PW et al.)
–, – serine receptor in *Oncorhynchus* 159:61 (Rehnberg BG, Schreck CB)
–, photic spectral sensitivity of *Rutilus* 159:415 (Douglas RH)
–, photoreceptors of *Rutilus* 159:859 (Downing JEG et al.)
–, photosensitive pineal cells in *Phoxinus*, 159:325 (Nakamura T et al.)
–, polarization sensitivity in *Carassius* 160:459 (Hawryshyn CW, McFarland WN)
–, receptor mechanism in *Anguilla* hair cells 158:681 (Baumann M, Roth A)
–, sensory gating by corollary discharge in electric fish 151A:401 (Meyer JH, Bell CC)
–, sexually dimorphic electric signals in *Hypopomus* 156:511 (Hagedorn M, Carr C)
–, spectral input to *Negaprion* ganglion cells 156:579 (Cohen JL, Gruber SH)
–, – sensitivity of *Haplochromis* 157:247 (Allen EE, Fernald RD)
–, spherical aberration of freshwater fish lens 154:415 (Kreuzer RO, Sivak JG)
–, steroid influences upon *Apteronotus* pacemaker 154:659 (Meyer JH)
–, – influences upon *Sternopygus* electrosensory system 154:625 (Meyer JH et al.)
–, steroids and discharge frequency in *Sternopygus* 153A:29 (Meyer JH)
–, – and leucin transport in *Salmo* 151B:247 (Habibi H et al.)
–, stimulation of *Carassius* olfactory bulb 158:563 (Schild D, Zippel HP)
–, synaptic currents from *Trachurus* muscle 155:649 (Macdonald JA, Balnave RJ)
–, – vesicle in *Raja* electrocyte 160:331 (Kriebel ME et al.)
–, tectal visual responses in *Tribolodon* 152A:147 (Kawasaki M, Aoki K)
–, torus semicircularis sensitivity in *Eigenmannia* 159:813 (Rose G, Heiligenberg W)
–, visual pigment sensitivity hypothesis 157:323 (Crescitelli F et al.)
–, wavelength discrimination in *Carassius* 158:203 (Neumeyer C)
Planorbarius, supralateral radular retractor muscles 160:115 (Tattersall JEH, Brace RC)
Platyhelminthes, action potentials in *Notoplana* neurones 155:197 (Keenan L, Koopowitz H)
Platyrhinoidis, diencephalic electrosensory nuclei 153A:331 (Schweitzer J)
–, electroreceptive midbrain 158:43 (Schweitzer J)
–, noise cancellation in electrosensory system 155:103 (Montgomery JC)
Pleurobrachia, control of ciliary motor responses 158:311 (Moss AG, Tamm SL)
Pleurobranchaea, diversity of cerebral ganglia neurons 153A:533 (McClellan AD)
Plunge reaction of backswimmers 155:319 (Schwind R)
Polarization pattern analysis by honeybees 154:607 (Rossel S, Wehner R)
– sensitivity of crab photoreceptors 154:597 (Doujak FE)
– – of crayfish retinula and lamina 156:315 (Sabra R, Glantz RM)
– – of crustacean retinula cells 153A:435 (Stowe S)
– vision, true, via two-channel analyzer in bug eye 154:53 (Schwind R)
Polarized skylight orientation in desert ants 158:145 (Fent K)
Polarotaxis in desert lizards 156:547 (Adler K, Phillips JB)
Polichne, physiology of auditory receptors 155:689 (Oldfield BP)
Pollimyrus, acoustic communication 159:297 (Crawford JD et al.)
–, sensory gating by corollary discharge 151A:401 (Meyer JH, Bell CC)
Polychaeta, see *Glycera*, *Typosyllis*
Polyorchis, neural mechanisms of shadow reflex 159:201, 215 (Arkett SA, Spencer AN)
Popillia, glutamate dehydrogenase isozymes 151B:199 (Male KB, Storey KB)
Porcellio, water relations 151B:155 (Quinlan MC, Hadley NF)
Porcellionides, water relations 151B:155 (Quinlan MC, Hadley NF)
Porpoise, see *Phocoena*
Portunus, cardiac ganglion topography 151A:311 (Tazaki K, Cooke IM)
Potassium concentration changes in leech photoreceptors 157:199 (Walz B)
– transport in tobacco hornworm integument 153B:147 (Cornell JC, Jungreis AM)
Preoptic area, trigger for frog mating calling 154:847 (Schmidt RS)

Prey detection, acoustical cues in bat – 160:509 (Marimuthu G, Neuweiler G)
– –, movement as specific stimulus in bat – 159:403 (Link A et al.)
– striking under water by reef heron 160:517 (Katzir G, Intrator N)
Prey-catching behavior in salamander 153A:85 (Finkenstädt T, Ewert J-P)
Prionotus, fin ray chemoreception 154:167 (Silver WL, Finger TE)
Proboscis extension, directional, in blowfly 160:367 (Yetman S, Pollack GS)
Procambarus, adaptation-induced structural changes in retinula cells 159:667 (Frixione E, Porter RM)
–, effects of unilateral immobilization in claws 157:461 (Pahapill PA et al.)
–, interneurons coding water vibration frequency 158:751 (Plummer MR et al.)
–, interrelation between posture and locomotion 157:509 (Tatsumi H et al.)
–, lateral inhibition of a local interneuron 157:499 (Krenz WD, Reichert H)
–, local interneurons mediating lateral inhibition 151A:261 (Reichert H et al.)
–,– motor giant inhibitor neurons 158:69 (Kirk MD et al.)
–,– non-spiking interneurons 154:499 (Nagayama T et al.)
–, motor system interaction 157:547 (Takahata M, Hisada M)
–, neural control of cyclic postural behavior 160:169 (Moore D, Larimer JL)
–, neuronal interactions in postural control system 156:861 (Jellies J, Larimer JL)
–, polarization sensitivity and selective information channels 156:315 (Sabra R, Glantz RM)
–, presynaptic inhibition in brain 156:477 (Glantz RM et al.), 605 (Wang-Bennett LT, Glantz RM)
–,– inhibition of afferents 153A:443 (Fricke RA, Kennedy D)
–, pyrethroid-induced activity in stretch receptor neuron 159:43 (Ruigt GSF et al.)
–, responses of photoreceptors after intense light adaptation 158:35 (Cummins DR, Goldsmith TH)
–, serial order of escape behavior 153A:3 (Reichert H, Wine JJ)
–, spikeless interaction of motoneurons 152A:335 (Nagayama T et al.)
–, visualization of neurons 158:625 (Reichert H, Krenz WD)
Progesterone, effect on prostaglandin-induced phonotaxis in toad 156:823 (Schmidt RS)
Proprioception, non-spiking elastic strand receptors in crustaceans 160:599 (Cannone AJ)
–, role in locust flight control 156:93, 103, 281 (Möhl B)
–, strand receptor connections in locusts 160:295 (Pflüger H-J, Burrows M)
Proprioceptors, actions and interactions of locust – 157:73, 83 (Bräunig P, Hustert R)
–, responses of crayfish antennal – 157:363 (Sandeman DC)
Prostaglandin-induced mating call phonotaxis in toad 156:823 (Schmidt RS)
Protein, antifreeze, in beetle larva 151B:233 (Horvath KL, Duman JG)
– metabolism in hibernating bat muscle and liver 152B:137 (Yacoe ME)
– transport, axonal, in crab X-organ sinus gland 153B:191 (Stuenkel EL)
Proteins, retinal-binding, in honeybee eyes 154:549 (Schwemer J et al.)
–, vitellogenin and vitellin from a tick 152B:13 (Chinzei Y et al.)
Protozoa, chemoreception in *Paramecium* 160:525, 537 (Preston RR, Van Houten JL)
–, ciliary motor control in *Stylonychia* 154:113 (Deitmer JW et al.)
–,– reversal in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
–, circadian rhythm in *Gonyaulax* RNA 151B:207 (Walz B et al.)
–, folate binding and chemoreception in *Paramecium* 155:113 (Schulz S et al.)
–, heat responses of *Paramecium* 153A:39 (Hennessey TM et al.)
–, mechanoreceptor properties in *Paramecium* tail cilia 154:263 (Machemer-Röhnisch S, Machemer H), 273 (Machemer H, Machemer-Röhnisch S)
–, membrane currents in *Didinium* 158:111 (Pape H-C, Machemer H)
–, net flux of amino acids in *Tetrahymena* 152B:27 (Davis JP, Stephens GC)
Pseudemys, gaze stabilization 153A:495 (Dieringer N et al.)
Pteronotus, cochlear frequency-place map 157:687 (Kössl M, Vater M)
–, cortical FM-FM sensitive neurons 159:331 (Taniguchi I et al.)
–, physiological properties of inner ear 157:587 (Henson OW et al.)
–, responses in inferior colliculus 157:797 (O'Neill WE)
–, single units in inferior colliculus 153A:67 (Bodenhamer RD, Pollak GD)
Pulmonary function, effect of hypoxia in anurans 152B:125 (Withers PC, Hillman SS)
Purinergic olfactory cells of crustaceans 155:341 (Derby CD et al.)
Purkinje cells, electrical responses to pineal indoleamines 154:675 (Semm P, Vollrath L)
Pyloric pattern generator, crustacean 153A:17 (Rezer E, Moulins M)
– region, innervation of muscles in crab – 159:227 (Hooper SL et al.)
– rhythmic motor system, myogenicity in shrimp – 158:489 (Meyrand P, Moulins M)
Pyrethroid insecticide, repetitive activity in crayfish stretch receptor neuron induced by – 159:43 (Ruigt GSF et al.)
Pyridine receptor, temperature sensitivity in crayfish – 152A:395 (Hatt H)
Pyridine-sensitive units on crayfish leg 154:855 (Hatt H, Schmiedel-Jakob I)
Pyrrolizidine alkaloids, regulation of organogenesis and biosynthesis in moth by – 157:569 (Boppré M, Schneider D)
Pyruvate kinase from sturgeon muscle 153B:247 (Guderley H et al.)
Python, infrared tectal thresholds 151A:461 (Cock Buning T de)

Q

Quail, see *Coturnix*

R

Rabbit, circadian activity 151A:359 (Nuboer JFW et al.)
–, cone systems in the retina 151A:347 (Nuboer JFW et al.)
–, nipple-search pheromone 155:13 (Hudson R, Distel H)
–, olfactory and tactile modalities in nipple-search behaviour 157:599 (Distel H, Hudson R)
–, spectral sensitivity 151A:353 (Nuboer JFW, Moed PJ)
–, vestibular nystagmus 160:585 (Lau CGY, Honrubia V)
Raja, MEJPs and synaptic vesicle in electrocyte 160:331 (Kriebel ME et al.)
Rana, accommodation and depth vision 158:133 (Douglas RH et al.)
–, auditory habituation 151A:423 (Megela AL, Capranica RR)
–,– thalamic responses 160:477 (Mudry KM, Capranica RR)
–, binocularly driven neurons in optic tectum 157:47 (Gaillard F)
–, coding of pulsed sound signals 155:57 (Walkowiak W)
–, contractile performance of sartorius muscle 151B:127 (Renaud JM, Stevens ED)
–, extraocular reflex organization 158:179 (Dieringer N, Precht W)
–, gaze stabilization 153A:495 (Dieringer N et al.)
–, identified tectal neurons 159:721 (Matsumoto N et al.)
–, K-channels in labyrinthine organ 155:739 (Valli P et al.)
–, neural correlates for calling 154:847 (Schmidt RS)
–, prey orienting 156:775 (Grobstein P et al.)
–, pulmonary function and metabolism 152B:125 (Withers PC, Hillman SS)
–, response of trochlear motoneurons 154:233 (Knöpfel T et al.)
–, rod disc shedding 155:763 (Williams DS et al.)
–, sensory inputs to optic tectum 154:617 (Gorlick DL et al.)
–,– transduction in mechanoreceptors 157:657 (Watts RE, French AS)

Rat, circadian rhythm of autophagy in visual cells 156:669 (Remé C et al.)
–, gustatory intensity discrimination in NTS 155:271 (Maes FW, Erickson RP)
–, pineal N-acetyltransferase rhythm 154:739 (Illnerová H, Vaněček J)
Ray, see *Platyrhinoidis, Raja*
Rb, effects on labyrinthine sensory neurons 155:739 (Valli P et al.)
Rectum, oxidative metabolism in locust – 151B:191 (Chamberlin ME, Phillips JE)
Reflex, motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
Remak's nerve, pre- and postganglionic fibres in chicken – 157:383 (Hodgkiss JP)
Renal phosphate transport in turtle 152B:117 (Laverty G)
Reproduction, lunar-rhythmic, in a polychaete 156:553 (Franke H-D)
Reptilia, cardiorespiratory responses in *Elaphe* 152B:59 (Lillywhite HB et al.)
–, circadian organization in *Anolis* 152A:265 (Underwood H)
–, compass movement and polarotaxis in *Uma* 156:547 (Adler K, Phillips JB)
–, evoked cochlear responses from *Tiliqua* 154:719, 729 (Holmes RM, Johnstone BM)
–, gaze stabilization in *Pseudemys* 153A:495 (Dieringer N et al.)
–, hormone effects on *Sceloporus* territoriality 158:159 (Moore MC)
–, infrared tectal thresholds in snakes 151A:461 (Cock Buning T de)
–, movement detection by *Anolis* 159:711 (Fleishman LJ)
–, orientation and navigation of juvenile *Alligator* 154:649 (Rodda GH)
–, pineal melatonin rhythms in *Anolis*157:57 (Underwood H)
–, renal phosphate transport in *Chrysemys* 152B:117 (Laverty G)
–, spinal reflex pattern in *Testudo* 156:153 (Steffens H et al.)
–, temperature and hearing in *Caiman* 155:19 (Smolders JWT, Klinke R)
–, thermal dependence of locomotion and aerobic capacity in *Heloderma* 151B:119 (John-Alder HB et al.)
–, ventilatory control in *Chrysemys* 151B:145 (Glass ML et al.)
Respiration, effects of exogenous and endogenous hypercapnia in trout 151B:185 (Thomas S et al.)
–, ventilatory control in the turtle 151B:145 (Glass ML et al.)
Respiratory activity of fly photoreceptor mitochondria 160:195 (Tinbergen J, Stavenga DG)
– bursts in lamprey rostral medulla 157:303 (Rovainen CM)
– interneurons in dragonfly larva central nervous system 154:331 (Komatsu A)
– motoneurons, inputs to – in lamprey brain 157:291 (Thompson KJ)
– pattern generation in lampreys 158:91 (Russell DF)
Rest deprivation, effect on fish motor activity 157:817 (Tobler I, Borbély AA)
Rete ophthalmicum, role in brain temperature regulation 153B:241 (Midtgård U et al.)
Retina, afferent and efferent components in *Octopus* – 151A:381 (Patterson JA, Silver SC)
–, cone systems in rabbit – 151A:347 (Nuboer JFW et al.)
–, phosphorylation of opsin in blowfly – 155:39 (Paulsen R, Bentrop J)
–, pigment migration in moth – 159:353 (Hamdorf K et al.)
–, SER changes in crayfish – upon adaptation 159:667 (Frixione E, Porter RM)
–, spectral receptors in dragonfly – 151A:295 (Meinertzhagen IA et al.)
–, triggering of pigment migration in moth – by light near the cornea 160:355 (Land MF)
Retinal, light-induced isomerization by a protein in bee eyes 154:549 (Schwemer J et al.)
Retinal mosaics in jumping spider eyes 157:391 (Blest AD)
– receptor types of butterflies 160:247 (Steiner A et al.)
Rhabdom, membrane turnover in a crab 153A:365 (Stowe S)
Rhabdoms, spectral characteristics of isolated – 155:47 (Paulsen R)
Rhagoletis, responses of tarsal chemoreceptors 154:143 (Bowdan E)
Rhinolophus, auditory self-stimulation by vocalization 160:635 (Pietsch G, Schuller G)
–, cochlear frequency-place map 157:671 (Vater M et al.)
–, collicular responses to wing beat echoes 155:121 (Schuller G)
–, control of echolocation pulses in nucleus ambiguus 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
–, detection of oscillating targets 153A:385 (Schnitzler H-U, Flieger E)
–, echolocation 152A:421 (Vogler B, Neuweiler G)
–, – behavior 157:39 (Schnitzler H-U et al.)
–, – sounds and Doppler shift compensation 158:239 (Schuller G)
–, – sounds and hearing 156:185 (Taniguchi I)
–, movement detection 159:403 (Link A et al.)
–, nuclei of lateral lemniscus 160:395 (Metzner W, Radtke-Schuller S)
–, physiological properties of inner ear 157:587 (Henson OW et al.)
–, single units in auditory cortex 155:821 (Ostwald J)
Rhinopoma, echolocation and hearing 154:347 (Simmons JA et al.)
Rhodnius, induction of rhythmicity by ecdysteroids 157:699 (Ampleford EJ)
Rhodogastria, CO_2 sensitive receptors on labial palps 158:741 (Bogner F et al.)
Rhynchotragus, metabolic effects of temperature and dehydration 152B:23 (Kamau JMZ, Maloiy GMO)
Rhythm, gastric, in rock lobster 154:473 (Robertson RM, Moulins M)
Rhythmicity, biochronometry of sparrow testicular regression 153A:489 (Moore MC et al.)
–, brain serotonin and circadian rhythms in sparrows 156:145 (Cassone VM, Menaker M)
–, circadian clock of moth gut-purge rhythm 155:639 (Mizoguchi A, Ishizaki H)
–, – organization in a lizard 152A:265 (Underwood H)
–, – organization in *Aplysia* 156:293 (Jordan WP et al.)
–, – organization in hamster exposed to short day photoperiod 159:7 (Puchalski W, Lynch GR)
–, – oscillator in *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
–, – oscillators in isolated avian pineal gland 154:435 (Takahashi JS, Menaker M)
–, – pacemaker activity in cockroach 152A:231 (Page TL)
–, – rhythm in dinoflagellate RNA 151B:207 (Walz B et al.)
–, – rhythm of autophagy in rat retina 156:669 (Remé C et al.)
–, – rhythms of quail testosterone-dependent behaviors 158:17 (Wada M)
–, – system controlling *Ostrinia* photoperiodism 156:653 (Takeda M, Skopik SD)
–, circannual rhythm of food intake in a bird 156:429 (Bhatt D, Chandola A)
–, circa-tidal rhythm of larval release in incubating crab 159:21 (Saigusa M)
–, colliding of activity onset and offset in hamsters 159:187 (Mrosovsky N, Hallonquist JD)
–, colour changes as synchronizers of rabbit circadian activity 151A:359 (Nuboer JFW et al.)
–, conditioning of *Drosophila* clock mutants 151A:545 (Jackson FR et al.)
–, ecdysteroid effects on timing of ecdysis in an hemipteran 157:699 (Ampleford EJ)
–, effect of rest deprivation on fish motor activity 157:817 (Tobler I, Borbély AA)
–, effects of partial SCN lesions on hamster circadian rhythms 156:803 (Pickard GE, Turek FW)
–, – of pinealectomy and melatonin implants on housefinch activity rhythms 153A:413 (Fuchs JL)
–, – of SCN lesions on rodent circadian rhythms 155:745 (Sato T, Kawamura H)
–, functional symmetry of hamster suprachiasmatic nuclei 154:221 (Davis FC, Gorski RA)
–, geographical variation in *Drosophila* time measurement 159:123 (Lankinen P)
–, light-sampling in squirrel photoentrainment 159:161 (DeCoursey PJ)
–, light-sensitive phase in photoperiodic termination of butterfly diapause 155:161 (Brunnarius J, Dumortier B)

Rhythmicity, lizard pineal melatonin rhythms 157:57 (Underwood H)
–, lunar reproduction in a polychaete 156:553 (Franke H-D)
–, mosquito circadian and circa-bi-dian flight rhythms 155:1 (Clopton JR)
–, mouse circadian wake and activity timing 158:827 (Welsh DK et al.)
–, myogenic oscillatory activity in shrimp pylroric motor system 158:489 (Meyrand P, Moulins M)
–, perch hopping and feeding cycles in starlings in LL 154:669 (Gänshirt G et al.)
–, photoperiodic activation of brains in slug castrates 158:151 (McCrone EJ, Sokolove PG)
–, – counter as evidence for hourglass time measurements in spider mite 160:421 (Veerman A, Vaz Nunes M)
–, – time measurement in fly larvae 154:789 (Saunders DS)
–, photopigment role in quail photoperiod response 157:519 (Foster RG, Follett BK)
–, preparatory behavior in a moth 155:521 (Truman JW)
–, resetting polychaete circalunar reproduction rhythm 159:569 (Franke H-D)
–, role of eyes in *Aplysia* circadian organization 153A:133 (Lickey ME et al.)
–, – of pineal organ and eye in pigeon circadian organization 154:59 (Ebihara S et al.)
–, seasonal changes in hamster pineal N-acetyltransferase activity rhythms 160:593 (Steinlechner S et al.)
–, – hearing changes in skink 154:729 (Holmes RM, Johnstone BM)
–, see also photoperiod
–, snail ocular circadian pacemaker system 155:365 (Block GD et al.), 379 (McMahon DG et al.), 387 (Block GD, McMahon DG)
–, spectral sensitivity of bat circadian rhythm 156:189 (Joshi D, Chandrashekaran MK)
–, synchronization of ground squirrel circannual cycles 156:125 (Joy JE, Mrosovsky N)
–, transfer of a time signal in honeybees 160:3 (Martin H, Martin U)
–, two components of hamster split circadian activity rhythms 153A:123 (Lees JG et al.)
RNA, circadian rhythm in a dinoflagellate 151B:207 (Walz B et al.)
Roach, see *Rutilus*
Rod disc shedding in frog retina 155:763 (Williams DS et al.)
Rotation, crayfish locomotion and posture in response to – 157:509 (Tatsumi H et al.)
Rutilus, spectral sensitivitiy 159:415 (Douglas RH)
–, structure-function studies on photoreceptors 159:859 (Downing JEG et al.)

S

Saccadic activity in goldfish torus longitudinalis 155:333 (Northmore DPM)
Saccopteryx, echolocation calls 151A:515 (Barclay RMR)
Saccular neurons, auditory response in catfish 155:615 (Moeng RS et al.)
Salamander, see *Ambystoma, Salamandra*
Salamandra, processing of visual stimuli by tectal neurons 153A:85 (Finkenstädt T, Ewert J-P)
–, visual pattern discrimination 153A:99 (Finkenstädt T, Ewert J-P)
Salmo, adrenaline and blood oxygen affinity 152B:67 (Nikinmaa M)
–, blood acid-base balance 152B:53 (Thomas S)
–, exogenous and endogenous hypercapnia 151B:185 (Thomas S et al.)
–, gustatory responses to amino acids 153A:423 (Marui T et al.)
–, steroids and leucin transport 151B:247 (Habibi H et al.)
Salmon, see *Oncorhynchus*
Salt, responses of fly chemoreceptors to – 154:143 (Bowdan E)
– taste quality, neural coding in blowfly 159:75 (Maes FW, Harms G), 89 (Maes FW, Ruifrok ACC)
Salticidae, physiological optics 157:391 (Blest AD)
Samia, gut-purge clock 155:639 (Mizoguchi A, Ishizaki H)
Sandhopper, see *Talitrus*
Sarcophaga, photoperiodic time measurement 154:789 (Saunders DS)
Sarotherodon, activity of lateral line units 157:555 (Münz H)
Sartorius muscle, contractile performance in frog and toad 151B:127 (Renaud JM, Stevens ED)
Scaphognathite motor neurons in shore crab 155:397 (DiCaprio RA, Fourtner CR)
Sceloporus, hormones and territoriality 158:159 (Moore MC)
Scent organ morphogenesis, alkaloid regulation in moth 157:569 (Boppré M, Schneider D)
Schistocerca, control of steering postures in flight 159:849 (Arbas EA)
–, interactions of median ocellar neurons 159:97 (Simmons PJ)
–, mechanical power output of flight muscle 160:413 (Mizisin AP, Josephson RK)
–, mechanics of tympanal organs 157:619 (Breckow J, Sippel M)
–, oxidative metabolism in rectum 151B:191 (Chamberlin ME, Phillips JE)
–, parallel effects of joint receptors 160:341 (Laurent G)
–, rectal oxygen consumption 153B:223 (Sell D, Houlihan DF)
–, strand receptor connections 160:295 (Pflüger H-J, Burrows M)
–, thoracic intersegmental interneurones 159:171 (Laurent G)
Seal, see *Leptonychotes, Phoca*
Sense organs, controlling leg movements in insects 154:695 (Cruse H et al.)
Sensory dynamics of cricket cercal hairs 155:495 (Shimozawa T, Kanou M)
– intensity discrimination, neural coding model for – 155:263 (Maes FW)
– neurons, somatotopic projections in moth larvae 157:1 (Levine RB et al.)
– organization of fly neck motor system 160:225 (Milde JJ et al.)
– physiology, bristle hairs and interneurons as second cercal system in crickets 156:357 (Murphey RK)
– systems of newt embryos 152A:529 (Roberts A, Clarke JDW)
– transduction in frog mechanoreceptors 157:657 (Watts RE, French AS)
Serine receptor, olfactory, in coho salmon 159:61 (Rehnberg BG, Schreck CB)
Serotonin, effect on excitatory postsynaptic currents in crayfish muscle 159:13 (Finger W, Martin C)
–, manipulation of brain – phase shifts circadian rhythms 156:145 (Cassone VM, Menaker M)
–, role in leech feeding behavior 154:457 (Lent CM, Dickinson MH)
Sesarma, circa-tidal rhythm of larval release 159:21 (Saigusa M)
Sexually dimorphic EODs in gymnotid 156:511 (Hagedorn M, Carr C)
Shadow reflex, neuronal mechanisms in a hydromedusan 159:201, 215 (Arkett SA, Spencer AN)
Shark, see *Cephaloscyllium, Ginglystoma, Negaprion*
Shrimp, see *Alpheus, Palaemon, Palaemonetes, Squilla*
Sinus gland, peptides in crab – 153B:191 (Stuenkel EL), 207 (Newcomb RW)
Sitophilus, gravity-orientation 159:377 (Wendler G, Scharstein H)
Skin receptor, slow-adapting, in pigeon 156:391 (Necker R)
Skink, see *Tiliqua*
Skototaxis in mealworm beetle 160:543 (Varjú D)
Slug, see *Limax*
Snail, see *Bulla*, gastropods, *Littorina, Lymnaea, Planorbarius*
Snake, see *Agkistrodon, Boa, Elaphe, Python*
Social signal control in cichlid fish 160:89, 99 (Muske LE, Fernald RD)
Sodium, see Na
Solar direction finding in sandhoppers 151:435 (Pardi L, Scapini F); 156:729 (Scapini F et al.) 157:433 (Scapini F, Buiatti M)
Solemya, bacterial symbionts 152B:3 (Felbeck H)
Solenopsis, inhibitory pheromone 153A:567 (Fletcher DJC, Blum MS)

–, queen control over production of sexuals 159:741 (Vargo EL, Fletcher DJC)
Song, harmonic content effect on cricket phonotaxis 158:583 (Latimer W, Lewis DB)
–, pure-tone, in cicadas 152A:197 (Young D, Josephson RK)
–, recognition and pattern in a grasshopper 153A:393 (Skovmand O, Pedersen SB)
Song coding by cricket ventral cord neurons 154:103 (Hutchings M, Lewis B)
– – in cricket ascending neurons 154:423 (Boyd P et al.)
Songs, model –, locust auditory neuron responses to – 156:845 (Römer H, Seikowsky U)
Sound, coding of location and frequency in bird auditory midbrain 157:149 (Calford MB et al.)
–, low-frequency, response of bushcricket giant interneurons to – 151A:449 (Shen J-X)
Sound production, characteristics of tree frog calls 155:577 (Wilczynski W et al.)
– – in cicadas 152A:183, 197 (Young D, Josephson RK)
– –, echolocation calls of bats 151A:515 (Barclay RMR)
– –, functional and temporal analysis of – in wax moths 159:751 (Spangler HG)
– – by hybrid treefrogs 154:319 (Doherty JA, Gerhardt HC)
– –, moth clicks and bat echolocation 156:831 (Surlykke A, Miller LA)
– –, neural correlates for frog calling 154:847 (Schmidt RS)
– –, ontogeny of bat – 158:247 (Habersetzer J, Marimuthu G)
– –, precision of call timing in treefrogs 153A:403 (Zelick RD, Narins PM)
–, song patterns in a grasshopper 153A:393 (Skovmand O, Pedersen SB)
–, tooting and quacking vibration signals of honeybee queens 158:605 (Michelsen A et al.)
– –, see also calling, vocalization, stridulation
Sound signals, pulsed, neuronal correlates of recognition in frog 155:57 (Walkowiak W)
– transduction in locust tympanal organs 157:619 (Breckow J, Sippel M)
Sounds, echolocation –, effect on bat Doppler shift compensation 158:239 (Schuller G)
Sparrow, see *Passer, Zonotrichia*
Spectral cues, role in bee celestial orientation 155:605 (Rossel S, Wehner R)
– input to shark retinal ganglion cells 156:579 (Cohen JL, Gruber SH)
– receptors in dragonfly retina and lamina 151A:295 (Meinertzhagen IA et al.)
– sensitivity, four classes of cone in bird retinas 159:473 (Chen D-M, Goldsmith TH)
– –, interpreting trans-retinal recordings of – 159:481 (Goldsmith TH)
– – of a cichlid fish 157:247 (Allen EE, Fernald RD)
– – of bat circadian rhythm 156:189 (Joshi D, Chandrashekaran MK)
– – of chicken dorsal and ventral retinae 160:151 (Wortel JF et al.)
– – of daphnid eye movements 156:135 (Consi TR, Macagno ER)
– – of fly leg reflex 157:417 (Kirschfeld K, Vogt K)
– – of insect photoreceptors 158:165 (Menzel R et al.)
– – of insects, studied with Fourier Interferometric Stimulation 158:669 (Paul R et al.); 160:247 (Steiner A et al.)
– – of rabbit 151A:353 (Nuboer JFW, Moed PJ)
– – of respiratory activity in fly photoreceptor mitochondria 160:195 (Tinbergen J, Stavenga DG)
– – of roach cones 159:859 (Downing JEG et al.)
– – of roach 159:415 (Douglas RH)
– –, six classes in crab visual interneurons 157:235 (Knight D, Leggett LMW)
Speophyes, antennal thermal receptors 153A:343 (Corbière-Tichané G, Loftus R)
Spermophilus, spectral sensitivity of cones 156:503 (Jacobs GH et al.)
–, synchronization of circannual cycles 156:125 (Joy JE, Mrosovsky N)
Spheniscus, visual pigments and oil droplets 156:71 (Bowmaker JK, Martin GR)
Sphingid moth, see *Theretra*
Spider, see Araneae
Spinal reflex pattern in tortoise 156:153 (Steffens H et al.)
Squilla, stomatogastric nervous system 159:521 (Tazaki K et al.)
–, visual pigment 156:679 (Cronin TW)
Squirrel, see *Glaucomys, Spermophilus*
Starling, see *Sturnus*
Statocyst, response of octopus angular acceleration system to sinusoidal stimuli 156:403 (Williamson R, Budelmann BU)
–, nerve, efferent activity in octopus – 158:125 (Williamson R)
Steatornis, physiology of vocalization 156:243 (Suthers RA, Hector DH)
Sternopygus, androgen effects upon electroreceptor tuning 158:301 (Keller CH et al.)
–, effects of steroids on discharge frequency 153A:29 (Meyer JH)
–, neural mechanisms for electrolocation 160:491 (Rose G et al.)
–, plasticity of electroreceptor tuning 153A:477 (Zakon HH, Meyer JH)
–, steroid influences upon electrosensory system 154:625 (Meyer JH et al.)
Steroid regulation of peptide action in moth CNS 157:423 (Morton DB, Truman JW)
Steroids, effects on electric organ discharge frequency 153A:29 (Meyer JH)
–, influences on fish pacemaker discharge frequencies 154:659 (Meyer JH)
–, – upon fish electrosensory system 154:625 (Meyer JH et al.)
Stick insect, see *Acrophylla, Carausius, Cuniculina*
Stomatogastric nervous system, anatomy and physiology of mantis shrimp – 159:521 (Tazaki K et al.)
– – system, localization of IV neurons in lobster 154:27 (Claiborne BJ, Selverston AI)
Strains in spider exoskeleton 157:115 (Blickhan R, Barth FG)
Strand receptor, elastic non-spiking, in crustaceans 160:599 (Cannone AJ)
– –, synapses on local interneurons in locusts 160:295 (Pflüger H-J, Burrows M)
Stress, effect on newt leukocytes 153A:81 (Bennett MF, Daigle KR)
–, effects on newt blood during early regeneration 159:823 (Bennett MF)
Stretch receptor, pyrethroid-induced repetitive activity in crayfish – 159:43 (Ruigt GSF et al.)
– –, role in locust flight 156:103, 281 (Möhl B)
Stridulation, in a noctuid moth 159:267 (Surlykke A, Gogala M)
–, role of plurisegmental interneurons in grasshopper – 158:413, 529 (Hedwig B)
–, switching-off of an auditory interneuron during –158:861 (Wolf H, Helversen O von)
Strophanthidin, effect on rod disc shedding 155:763 (Williams DS et al.)
Sturgeon, see *Acipenser*
Sturnus, circadian rhythmicity in LL 154:669 (Gänshirt G et al.)
–, cochlear ganglion neurons 157:161 (Manley GA et al.)
–, modulation of activity in cochlear ganglion units 157:643 (Oeckinghaus H)
–, movements, visual fields and optics of eye 159:545 (Martin GR)
–, tonotopy of auditory forebrain 158:639 (Rübsamen R, Dörrscheidt GJ)
Stylonychia, motor control in cilia 154:113 (Deitmer JW et al.)
Subesophageal ganglion, satellite nervous system in locusts 160:69 (Bräunig P)
Sucrose, responses of fly chemoreceptors to – 154:143 (Bowdan E)
Sugar transport in fish intestine 151B:163 (Groot JA et al.); 152B:79 (Ferraris RP, Ahearn GA)
Sun compensation in honeybee 160:621 (Dyer FC)
Suprachiasmatic nuclei, control of hamster circadian rhythms 154:221 (Davis FC, Gorski RA)
– –, effects of partial lesions on hamster circadian rhythms 156:803 (Pickard GE, Turek FW)
– nucleus, effects of lesions on rodent circadian rhythms 155:745 (Sato T, Kawamura H)

Swimmeret local interneurons in crayfish 156:489 (Paul DH, Mulloney B)
– rhythms, coordination in crayfish 158:215 (Paul DH, Mulloney B)
– stimulation, lobster abdominal postural responses to – 158:225 (Kotak VC, Page CH)
– system, rami motor neurons and motor control in lobster – 160:55 (Cattaert D, Clarac F)
Swimming in antarctic fish 154:241 (Montgomery JC, Macdonald JA)
–, neuronal control in the leech 156:231 (Friesen WO)
–, sensory cell stimulation elicits leech – 160:447 (Debski EA, Friesen WO)
–, trigger neurons in leech initiating – 159:489, 503, 511 (Brodfuehrer PD, Friesen WO)
Symbiosis, animal-bacteria, in a gutless clam 152B:3 (Felbeck H)
Sympetrum, ommatidium in the ventral compound eye 151A:285 (Armett-Kibel C, Meinertzhagen IA)
–, spectral receptors in retina and lamina 151A:295 (Meinertzhagen IA et al.)
Synapse frequency in bee photoreceptors after chromatic deprivation 151A:477 (Hertel H)
Synaptic connections between hair afferents and motoneurons in larval tobacco hornworm 160:315 (Weeks JC, Jacobs GA)
– currents from teleost extraocular muscle 155:649 (Macdonald JA, Balnave RJ)

T

Tactile localisation, antennal movements in crayfish – 157:607 (Zeil J et al.)
– modalities in rabbit nipple-search behaviour 157:599 (Distel H, Hudson R)
Tadpoles, kin recognition in toad – 156:565 (Waldman B)
Talitrus, inheritance of solar direction finding 151:435 (Pardi L, Scapini F); 156:729 (Scapini F et al); 157:433 (Scapini F, Buiatti M)
Tarantula, see *Eurypelma*
Target, detection by bats 159:765 (Emde G von der, Schnitzler H-U)
–,– in noise by serotine bats 159:559 (Troest N, Møhl B)
–, oscillating, detection by echolocating bat 153A:385 (Schnitzler H-U, Flieger E)
Target-selective visual interneurons in dragonflies 159:817 (Olberg RM)
Taste center, projections of fish facial nerve to – 157:705 (Kiyohari S et al.)
– response to 2,5-anhydro-D-hexitols in fly receptor 157:477 (Shimada I et al.)
– responses, in hamster, effect of amiloride 160:281 (Herness MS)
– –, variability in fly – 157:211 (van der Molen JN et al.)
– neurons, primary, tuning of – in lobster walking legs 155:593 (Johnson BR et al.)
Tectal neurons, processing of visual stimuli in salamander – 153A:85 (Finkenstädt T, Ewert J-P)
– –, projecting to toad medullary regions 157:739 (Satou M, Ewert J-P)
Tectum, infrared sensitive neurons in snake – 151A:461 (Cock Buning T de)
–, optic, sensory inputs to frog – 154:617 (Gorlick DL et al.)
–, see also optic tectum
–, visual responses in fish – 152A:147 (Kawasaki M, Aoki K)
Telencephalon, glucose utilization in toad – after visual stimulation 158:457 (Finkenstädt T et al.)
Teleogryllus, auditory directionality 153A:523 (Boyd, Lewis B)
–,– interneuron sensitive to ultrasound 152A:155 (Moiseff A, Hoy R)
–, discrimination of calling song models 158:549 (Pollack GS)
–, frequency and temporal pattern-dependent phonotaxis 154:13 (Pollack GS et al.)
–, interneurons in flight system 160:431 (Robertson RM)
–, phonotactic specificity 157:223 (Doolan JM, Pollack GS)
–, song coding by ventral cord neurons 154:103 (Hutchings M, Lewis B)
–,– harmonic content and acoustic orientation 158:583 (Latimer W, Lewis DB)
–, steering responses during flight 159:423, 441 (Nolen TG, Hoy RR)
Temperature, brain – and rete ophthalmicum in fowl 153B:241 (Midgårdt U et al.)
– cycles in photoperiodic time measurement 154:789 (Saunders DS)
–, effect on characteristic frequency of pigeon auditory afferents 156:209 (Schermuly L, Klinke R)
–,– on crayfish chemoreceptors 152A:395, 405 (Hatt H)
–,– on fish myofibrillar protein complex 153B:167 (Sidell BD et al.)
–,– on kangaroo activity patterns 153B:175 (Rübsamen U et al.)
–,– on newt leukocytes 153A:81 (Bennett MF, Daigle KR)
–,– on wasp courtship behavior 155:233 (Assem J van den et al.)
–, effects on action potential encoding in insect mechanoreceptor 156:817 (French AS)
–,– on crab neuromuscular physiology 153A:455 (Stephens PJ, Atwood HL)
–,– on goldfish intestinal transport 151B:163 (Groot JA et al.)
–,– on metabolism in dik-dik antelope 152B:23 (Kamau JMZ, Maloiy GMO)
–,– on properties of caiman primary auditory fibres 155:19 (Smolders JWT, Klinke R)
–,– on ventilatory control in turtle 151B:145 (Glass ML et al.)
–, fly mutant sensitive to developmental – 151A:483 (Minke B)
Temperature regulation in willow tit 151B:109 (Reinertsen RE, Haftorn S)
Tenebrio, visual edge fixation and skototaxis 160:543 (Varjú D)
Tension receptors in crab muscle apodeme 157:355 (Hartman HB)
Territoriality, role of hormone levels in lizard – 158:159 (Moore MC)
Testicular regression timing in sparrows 153A:489 (Moore MC et al.)
Testosterone, effect on quail rhythmic behaviors 158:17 (Wada M)
– levels, role in lizard territoriality 158:159 (Moore MC)
Testudo, spinal reflex pattern 156:153 (Steffens H et al.)
Tetrahymena, net flux of amino acids 152B:27 (Davis JP, Stephens GC)
Tetranychus, photoperiodic clock 160:421 (Veerman A, Vaz Nunes M)
Tettigonia, cercus-to-giant interneuron system 151A:449 (Shen J-X)
–, hearing in the field 158:647 (Rheinlaender J, Römer H)
Tettigoniidae, see bushcricket
Thalamus, auditory evoked responses to species-specific calls in frog – 577 (Mudry KM, Capranica RR)
Thanasimus, olfactory receptor cells 157:335 (Tømmerås BÅ)
Thecophora, stridulation and hearing 159:267 (Surlykke A, Gogala M)
Theretra, pigment migration triggering 160:355 (Land MF)
Thermal dependence of locomotory energetics of the Gila Monster 151B:119 (John-Alder HB et al.)
– receptors in a cave beetle 153A:343 (Corbière-Tichané G, Loftus R)
Thermoreception, cold receptors on beetle antennae 153A:343 (Corbière-Tichané G, Loftus R)
–, heat responses of *Paramecium* 153A:39 (Hennessey TM et al.)
–, infrared tectal thresholds in snakes 151A:461 (Cock Buning T de)
–, responses of stick insect cold receptor 160:33 (Tichy H, Loftus R)
–, warm and cold receptors of a tick 155:187 (Hess E, Loftus R)
Thermoregulation in rat kangaroo 153B:175 (Rübsamen U et al.)
Thunnus, magnetic field discrimination 155:673 (Walker MM)
Thyroxine, effects of temperature and dehydration in an antelope 152B:23 (Kamau JMZ, Maloiy GMO)
Tick, see *Amblyomma*, *Ornithodores*
Tiliqua, evoked cochlear potentials 154:719, 729 (Holmes RM, Johnstone BM)
Time measurement in spider mite photoperiodic clock 160:421 (Veerman A, Vaz Nunes M)

– signal transfer in honeybee brain 160:3 (Martin H, Martin U)
Tit, see *Parus*
Toad, see *Bufo, Xenopus*
Tobacco hornworm, see *Manduca*
Tortoise, see *Testudo*
Torus longitudinalis, visual and saccadic activity in fish – 155:333 (Northmore DPM)
Torus semicircularis, phase and amplitude sensitivity in electric fish 159:813 (Rose G, Heiligenberg W)
Trachurus, synaptic currents from extraocular muscle 155:649 (Macdonald JA, Balnave RJ)
Treefrog, see *Eleutherodactylus, Hyla*
Trematomus, motor systems 154:241 (Montgomery JC, Macdonald JA)
Tribolodon, tectal visual responses 152A:147 (Kawasaki M, Aoki K)
Trichoplusia, pheromone blend perception 156:747 (O'Connell RJ)
Triiodothyronine, effects of temperature and dehydration in an antelope 152B:23 (Kamau JMZ, Maloiy GMO)
Triturus, embryo sensory system 152A:529 (Roberts A, Clarke JDW)
–, motor patterns in embryos 152A:535 (Soffe SR et al.)
Trochlear nerve, response to linear acceleration in frogs 154:233 (Knöpfel T et al.)
Trogoderma, male chemo-orientation to female sex pheromone 158:729 (Tobin TR, Bell WJ)
Trout, see *Salmo*
Tuna, see *Thunnus*
Tunicata, epithelial action potentials in *Oikopleura* 156:117 (Bone Q)
Turtle, see *Chrysemys, Pseudemys*
Tymbal muscles, contraction frequencies in cicadas 152A:183 (Young D, Josephson RK)
Tympanal membrane motion necessary for cricket hearing 151A:397 (Kleindienst H-U et al.)
– organs, mechanics of sound transduction in locust – 157:619 (Breckow J, Sippel M)
Tympanic organ functioning in moths 154:441; 156:689; 159:115 (Pérez M, Coro F)
– receptor fibres, spike synchronization of grasshopper – 157:631 (Ronacher B, Römer H)
Typosyllis, lunar-rhythmic reproduction timing 156:553 (Franke H-D)
–, resetting circalunar rhythm with moonlight 159:569 (Franke H-D)

U

Uca, inhibition of vibration-sensitive units 154:49 (Aicher B, Tautz J)
–, vibrational processing in CNS 157:91, 105 (Hall J)
Ultrasound, avoidance responses of flying crickets to – 159:413, 441 (Nolen TG, Hoy RR)
Ultra-violet induced pigment migration in moth eye 159:353 (Hamdorf K et al.)
– sensitivity of roach 159:415 (Douglas RH)
Uma, compass movement and polarotaxis 156:547 (Adler K, Phillips JB)
Urine composition in mosquitos 153B:257 (Williams JC et al.)

V

Vampire bat, see *Desmodus*
Velocity filter, a system for recording and on line decomposition 157:823 (Koch UT, Brunner M)
Ventilation, effects of hypercapnia in trout 151B:185 (Thomas S et al.)
–, neural control in crab 155:397 (DiCaprio RA, Fourtner CR)
Ventilatory movements, effects on ray electrosensory system 155:103 (Montgomery JC)
– –, neural control in an insect 153A:542 (Kinnamon SC, Kammer AE)
Ventral cord neurons, song coding by cricket – 154:103 (Hutchings M, Lewis B)
Ventricle, energy metabolism in whelk – 153B:159 (Ellington WR)
Vertebrates, phylogeny of brain gangliosides 151B:215 (Rahmann H, Hilbig R)
Vesicle, synaptic, in ray electrocyte 160:331 (Kriebel ME et al.)
Vestibular compensation in clawed toad 151A:487 (Rayer B et al.)
– neurons, central, activity in antarctic fish head and eye movements 160:289 (Montgomery JC, McVean AR)
– nystagmus, fast component threshold in rabbit – 160:585 (Lau CGY, Honrubia V)
Vestibulo-ocular reflex, static, development in clawed toad 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
Vibration frequency coding by crayfish mechanosensory interneurons 158:751 (Plummer MR et al.)
– sensitive neuron on crayfish walking legs 159:611 (Hatt H)
– – neurons, tuning of spider – 160:467 (Speck-Hergenröder J, Barth FG)
– – units in crab leg, peripheral inhibition 154:49 (Aicher B, Tautz J)
– signals of honeybee queens 158:605 (Michelsen A et al.)
Vibrational processing in crab central nervous sytem 157:91, 105 (Hall J)
– sensitivity in pigeon 152A:251 (Shen J-X)
Vibratory signals, processing in locust ventral nerve cord 156:45 (Čokl A et al.)
– stimuli, effects on spider behavior 152A:347, 361 (Hergenröder R, Barth FG)
Vision, afferent and efferent components in *Octopus* retina 151A:381 (Patterson JA, Silver SC)
–, angular sensitivity of blowfly photoreceptors 155:239 (Smakman JGJ et al.); 160:501 (Smakman JGJ, Stavenga DG)
–, antagonistic color effects in honeybee – 151A:441 (Menzel R, Lieke E)
–, binocularly driven neurons in frog optic tectum 157:47 (Gaillard F)
–, calcium and fly photoreceptor response 156:53 (Hochstrate P, Hamdorf K)
–, colour receptors and motor output in fly 157:417 (Kirschfeld K, Vogt K)
–, colour – in butterflies 155:529 (Horridge GA et al.)
–, cone systems in rabbit retina 151A:347 (Nuboer JFW et al.)
–, crayfish photoreceptor responses after intense light adaptation 158:35 (Cummins DR, Goldsmith TH)
–, crustacean polarisation sensitivity 153A:435 (Stowe S)
–, distribution of optokinetic sensitivity over crab eyes 160:127 (Nalbach H-O, Nalbach G)
–, diurnal changes in sensitivity of crayfish photoreceptors 158:573 (Bryceson KP)
–, dynamics of phototransduction in insects 154:707 (Howard J et al.)
–, electrical coupling of fly neuro-ommatidial photoreceptors 158:795 (Hateren JH van)
–, electrophysiology of ant different eye regions 158:1 (Labhart T)
–, e-vector pattern analysis by bees 154:607 (Rossel S, Wehner R)
–, four spectral classes of cone in bird retinas 159:473 (Chen D-M, Goldsmith TH)
–, – spectral types of photoreceptors in butterfly retina 152A:169 (Matić T)
– in stalk-eyed flies 151A:407 (Burkhardt D, Motte I de la)
–, interneurons in fleshfly lobula complex 157:831 (Umeda K, Tateda H)
–, interpreting trans-retinal recordings of spectral sensitivity 159:481 (Goldsmith TH)
–, large monopolar cells responsible for ERG transients in fly retina 159:665 (Coombe PE)
–, lateral inhibition in *Limulus* eye 152A:517 (Renninger GH)
–, movement detection by a lizard 159:711 (Fleishman LJ)
–, natural phototaxis to colours in honeybee 157:311 (Menzel R, Greggers U)
–, nonlinearities in locust photoreceptors 156:645 (French AS, Kuster JE)
–, non-local interactions in fly photoreceptors 154:175 (Minke B, Kirschfeld K)
–, ocellar interneurons in honeybee 154:683 (Milde JJ)
– of semi-terrestrial crabs 159:801 (Zeil J et al.)
–, optical angular sensitivities of fly photoreceptors 154:761 (Hateren JH van)

Vision, pattern discrimination through neural interactions in salamander brain 153A:99 (Finkenstädt T, Ewert J-P)
–, photic spectral sensitivity of roach 159:415 (Douglas RH)
–, photopigment properties of fishes from varying habitats 157:323 (Crescitelli F et al.)
–, photoreceptor membrane dichroism and polarization sensitivity in a crab 154:597 (Doujak FE)
–, physiology of cricket compound eye 155:289 (Labhart T et al.)
–, polarization sensitivity in crayfish retinula and lamina 156:315 (Sabra R, Glantz RM)
–, – sensitivity of fish photoreceptors 160:459 (Hawryshyn CW, McFarland WN)
–, processing of prey stimuli in salamander tectal neurons 153A:85 (Finkenstädt T, Ewert J-P)
–, properties of R7 and R8 in dorsal marginal ommatidia of fly compound eyes 154:157 (Hardie RC)
–, – of snail eye 152A:435 (Hamilton PV et al.)
–, rabbit spectral sensitivity 151A:353 (Nuboer JFW, Moed PJ)
–, retinal mosaics of jumping spider principal eyes 157:391 (Blest AD)
–, role of accommodation in anuran – 158:133 (Douglas RH et al.)
–, – of retinula cell types in fly fixation behavior 155:61 (Coombe PE)
–, see also eye
–, spectral characteristics of blowfly rhabdoms 155:47 (Paulsen R)
–, – input to shark ganglion cells 156:579 (Cohen JL, Gruber SH)
–, – receptors in dragonfly retina and lamina 151A:295 (Meinertzhagen IA et al.)
–, – sensitivity classes in crab visual interneurons 157:235 (Knight D, Leggett LMW)
–, – sensitivity of a cichlid fish 157:247 (Allen EE, Fernald RD)
–, – sensitivity of chicken retina 160:151 (Wortel JF et al.)
–, – sensitivity of daphnid eye movements 156:135 (Consi TR, Macagno ER)
–, – sensitivity of ground squirrel cones 156:503 (Jacobs GH et al.)
–, – sensitivity of insect photoreceptors 158:165 (Menzel R et al.)
–, – sensitivity of insects studied with FIS 158:669 (Paul R et al.); 160:247 (Steiner A et al.)
–, – sensitivity of pigment migration in moth eye 153A:59 (White RH et al.)
–, striking of underwater prey by reef heron 160:517 (Katzir G, Intrator N)
–, temporal acuity of honeybee – 155:297 (Srinivasan M, Lehrer M)
–, – resolution of bee colour vision 157:579 (Srinivasan M, Lehrer M)
–, true polarization – via two-channel analyzer in water-bug eye 154:53 (Schwind R)
–, two stages of integration in leech visual interneuron 155:543 (Peterson EL)
–, use of spectral cues in bee celestial orientation 155:605 (Rossel S, Wehner R)
–, V-log I curves of lepidopteran eyes 154:3 (Eguchi E, Horikoshi T)
–, wavelength discrimination in goldfish 158:203 (Neumeyer C)
Vision, see also eye, photoreception, photoreceptors, visual
Visual activity in goldfish torus longitudinalis 155:333 (Northmore DPM)
– adaption in nocturnal and diurnal ants 160:11 (Menzi U)
– cells in lamprey eyes 154:279 (Govardovskii VI, Lychakov DV)
– edge fixation in mealworm beetle 160:543 (Varjú)
– fields of starling eye 159:545 (Martin GR)
– interneurons in leech brain 156:697, 707, 719 (Peterson EL)
– –, target-selective, in dragonflies 159:827 (Olberg RM)
– key stimuli, mapping of activity to – in toad brain 156:433 (Finkenstädt T et al.)
– landmark use by gerbils 160:109 (Collett TS)
– learning in walking blowflies 157:771 (Fukushi T)
– movement, metabolic mapping in fly brain 155:471 (Buchner E et al.); 156:25 (Bülthoff I, Buchner E); 158:195 (Bülthoff I)
– optics of kingfishers 160:137 (Moroney MK, Pettigrew JD)
– orientation in walking gypsy moth 154:493 (Preiss R, Kramer E)
– pigment, renewal in fly photoreceptors 154:535 (Schwemer J)
– –, see also pigment, visual
– – in stomatopod eye 156:679 (Cronin TW)
– pigments of fishes from varying habitats 157:323 (Crescitelli F et al.)
– – in lamprey eyes 154:279 (Govardovskii VI, Lychakov DV)
– – of the penguin 156:71 (Bowmaker JK, Martin GR)
– –, retinal-binding protein in honeybee eye 154:549 (Schwemer J et al.)
– – in water bug eye 154:341 (Schwind R et al.)
– processing of color stimuli in a butterfly 160:645 (Scherer C, Kolb G)
– responses in fish optic tectum 152A:147 (Kawasaki M, Aoki K)
– scanning behaviour in honeybees 157:405 (Lehrer M et al.)
– stimuli, glucose utilization in toad telencephalon in response to – 158:457 (Finkenstädt T et al.)
– –, tectal neurons in frog optic tectum responding to – 159:721 (Matsumoto N et al.)
– stimulus efficacy, invariance of – in flies 154:555 (Horn E, Knapp A)
– system, γ-amino butyric acid and glutamic acid decarboxylase in fly – 159:241 (Datum K-H et al.)
– –, directionally selective cells in locust medulla 159:841 (Osorio D)
– –, neurophysiology of magnetic cells in pigeon – 159:619 (Semm P, Demaine C)
– –, nonspiking local interneurons in crayfish – 156:763 (Waldrop B, Glantz R)
Vitellin from a tick 152B:13 (Chinzei Y et al.)
Vitellogenin from a tick 152B:13 (Chinzei Y et al.)
Vocalization, androgen-induced alterations in female frog – 158:517 (Hannigan P, Kelley DB)
–, bat auditory self-stimulation by – 160:635 (Pietsch G, Schuller G)
–, control of bat – by nucleus ambiguus neurons 159:675 (Rübsamen R, Betz M), 689 (Rübsamen R, Schweizer H)
–, neural pathway in clawed frogs 157:749 (Wetzel DM et al.)
–, physiology of – in the echolocating oil bird 156:243 (Suthers RA, Hector DH)
Vocalization, see also calling, sound production, stridulation

W

Wake onset, circadian, in mouse 158:827 (Welsh DK et al.)
Walking movements, afferent control in stick insects 158:345, 351 (Bässler U)
– speed, control in ladybirds 156:395 (Zanker JM, Collett TS)
Warm receptors on foreleg tarsi of a tropical tick 155:187 (Hess E, Loftus R)
Wasp, see *Nasonia*
Water balance during dehydration in the emu 153B:235 (Dawson TJ et al.)
– relations in terrestrial idopods 151B:155 (Quinlan MC, Hadley NF)
– wave, frequency discrimination in frog 157:255 (Elepfandt A et al.)
– –, frequency recognition in clawed frogs 158:235 (Elepfandt A)
– waves, frog lateral-line responses to – 160:667 (Elepfandt A, Wiedemer L)
– –, localization by *Xenopus* lateral line 154:773 (Elepfandt A)
Wavelength discrimination in goldfish 158:203 (Neumeyer C)
Web-construction, spider orientation to gravity during – 159:279 (Vollrath F)
Weevil, see *Sitophilus*
Whelk, see *Busycon*
Wind evoked giant interneuron activity in cockroach escape behavior 160:571 (Comer CM, Dowd JP)
– sensitive hairs, controlling hindlimb posture during flight in locusts 159:849 (Arbas EA)

– – interneurones in mantis 159:773 (Boyan GS, Ball EE)
Wing stroke frequency, effect of air velocity on fly – 153A:289 (Otzen H, Kuiper JW)
Winter survival of cold hardy beetles 151B:225, 233 (Horwath KL, Duman JG)

X

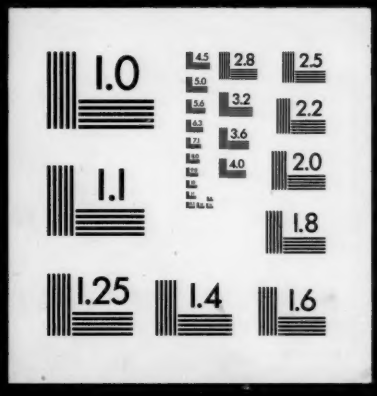
Xenopus, androgen-induced vocalization in females 158:517 (Hannigan P, Kelley DB)
–, development and vestibular compensation 151A:487 (Rayer B et al.)
–,– of static vestibulo-ocular reflex 159:869, 879 (Horn E et al.), 887 (Rayer B, Horn E)
–, directional sensitivity of lateral line 158:469 (Zittlau KE et al.)
–, lateral-line responses 160:667 (Elepfandt A, Wiedemer L)
–, neural control of calling 157:749 (Wetzel DM et al.)
–, rod disc shedding 155:763 (Williams DS et al.)
–, ventral lateral line taxis 154:773 (Elepfandt A)
–, water wave frequency discrimination 157:255 (Elepfandt A et al.)
–,– wave frequency recognition 158:235 (Elepfandt A)

Y

Y-organ, role in crayfish molt 152B:91 (Jegla TC et al.)

Z

Zebrafish, see *Brachydanio*
Zones, acute, in fly eyes 156:525 (Land MF, Eckert H)
Zonotrichia, mechanisms of dusk orientation 159:107 (Able KP, Cherry JD)
–, timing of testicular regression 153A:489 (Moore MC et al.)


1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.8